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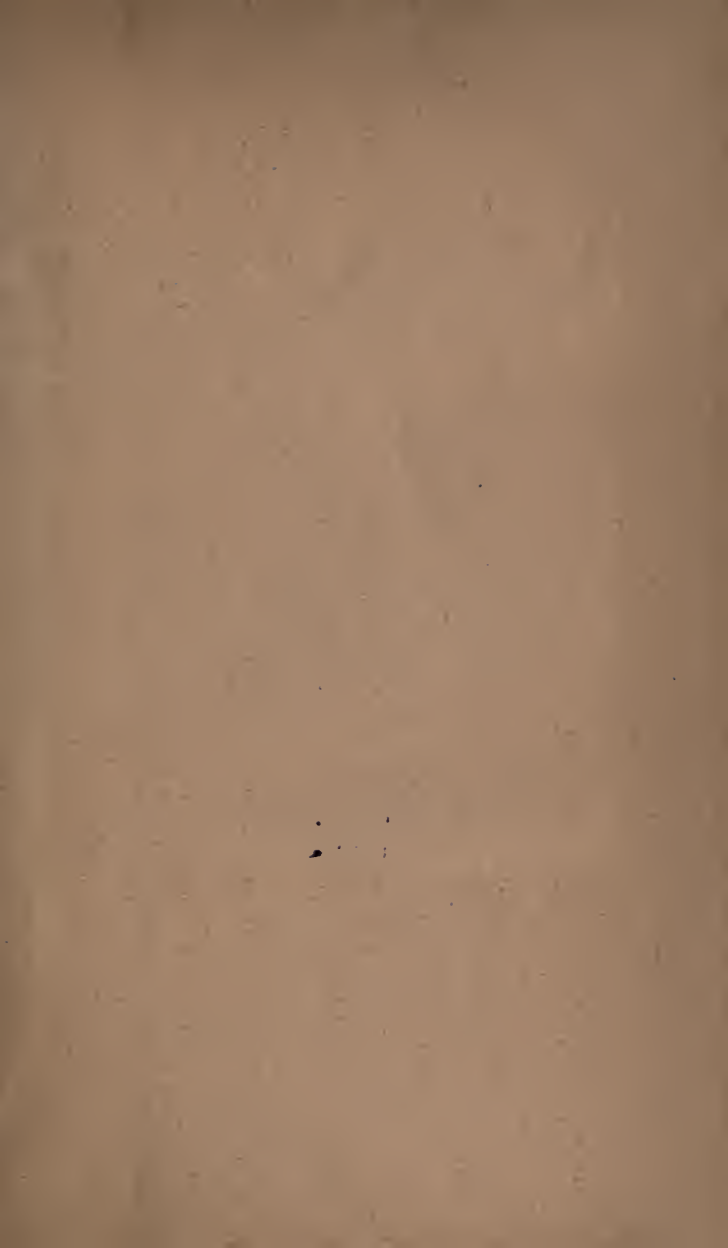


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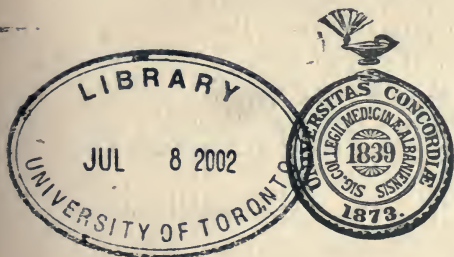


ALBANY MEDICAL ANNALS

Journal of the Alumni Association of the
Albany Medical College

VOLUME XXVI

Ἀσφαλὲς καὶ ἔμπεδον ἔστω τὸ σὸν ἔδος. Ἐκ σκότου μὲν ἔλαγε
φάος, ἐκ δὲ πάθους ἀναψυχὴν



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ALBANY MEDICAL ANNALS

Original Communications

THE SCIENTIFIC METHOD IN MEDICINE.

Address—Introductory to the Seventy-fourth Session of the Albany Medical College, September 20, 1904

By RICHARD M. PEARCE, M. D.,

Professor of Pathology and Bacteriology, Albany Medical College.

Gentlemen: We are gathered to-day to inaugurate another session of the Albany Medical College. Tradition has it that this opening exercise is not complete without an introductory address upon some phase of medical thought. Such an address is delivered by the members of the faculty in rotation, the sequence, I am told, being in the order of seniority. When, however, an addition is made to the faculty, this succession is interrupted and the new member appears before you at the first opportunity. The selection of a speaker is therefore not the result of cautious deliberation, but merely a matter of chance. This explanation I feel is due you.

I am, however, not insensible of the honor which the faculty has conferred upon me or of the responsibility imposed. To one, who has been with you so short a time, the opportunity of speaking to you to-day has a special and very pleasant value. To the satisfaction afforded by the confidence of the faculty, is added the pleasure of seeing the friendly faces of those with whom I have worked in the past year, and of offering a word of welcome to those who are with us for the first time. You are welcome, old and new alike, to the opportunities which this school offers to honest and earnest endeavor. What we possess of knowledge, equipment and opportunity is yours. All we ask is that you so

use these, that in later years, in the larger body of active students of your profession, you will find yourselves so ably equipped that you may be able to join in that search for truth, out of which alone has developed whatever is substantial and worthy in medicine, and upon which only does progress depend. This, indeed, is the central thought of that which I have to say to you to-day.

Casting about for a subject which would not only interest but instruct, and desirous of impressing upon you the fact that the fundamental principle in medicine to-day is the scientific method, it occurred to me that an analysis of the condition underlying important discoveries and advances in medicine might be of value. Such a study, while it may contain nothing new, offers an opportunity not only to bring before you the more important epochs in the history of medicine, but also enables one to point out and emphasize the principle which determines progress. We will find that this principle is that which dominates all science—the desire for exact knowledge, the search for truth. We will find that much that is now accepted as the science of medicine was at some time or other empirical—teachings without a foundation of truth and the result of chance or based on the methods of charlatans. Whenever such have disappeared, or have been given their foundation of truth, we see the influence of the scientific method. Some of you may here ask what is the scientific method? This question is best answered in the words of Prof. C. S. Minot,¹ “It is really only the right method of ascertaining the objective truth. It is in the classic words of von Baer, ‘*Beobachtung und Reflexion.*’ The student at the microscope looking at nuclei and protoplasm and deriving therefrom a correct conception of the nature of a cell uses the scientific method, and he uses the scientific method again when he observes the symptoms of a patient and reasons therefrom. There is nothing to distinguish the scientific method from the methods of everyday life except its precision. It is not a difference in kind or quality, but a quantitative difference, which marks the work of the true scientist and gives it validity.” The same sentiment is expressed in Sir Astley Cooper’s “First observe, and then think,” and represents the attitude of mind which has led to the establishment of the scientific medicine of to-day.

Huxley’s statement that “all true science begins with empiricism,” applies with peculiar force to medicine. Let us therefore see how medicine in its growth has rid itself of empiricism and by the aid of the scientific method has reared the substantial structure

underlying our present knowledge. In tracing this development, I will follow what may be called the main line of progress which is essentially the history of important discoveries in anatomy, physiology, pathology and bacteriology. With the information thus gained the advances in practical application, which naturally followed, will be more readily appreciated.

The early sacred, mystic and philosophic periods of medical history² do not concern us; our interest begins with the first records of exact study which characterize the so-called anatomical period covering several centuries previous to 200 A. D. Of the many contributions made at this time only those based upon careful dissection and accurate description, and in a few instances upon experiment, find a place in our present-day anatomy. All else not so grounded has gone the way of the schools and theories of that time. With the prominent names of that period we associate many topographical divisions of the body and descriptions of the more important structures of the body, especially of the bones, the muscles, the heart and the brain. The name of Herophilus has descended to us in the term applied to the meeting place of the sinuses of the brain. The keen observation of Erasistratus is indicated by his contention that the epiglottis prevented the entrance of fluids into the lungs. Galen's study of muscles laid the foundation of myology. He demonstrated their relation to voluntary motion and their lever-like mechanism by which they moved the bones. The terms, flexor and extensor, first applied by him, are in use to-day. His recommendation that bones be seen and handled, not merely studied from books, and that the student should go to Alexandria where he might see a human skeleton reminds one of the modern exponent of the laboratory method in teaching. Much, however, that was taught by Galen was not based on accurate observation and the blind acceptance of his views by those who followed him, delayed for centuries further progress. No advance of importance was made until the time of Vesalius, the pioneer research student in anatomy, whose work on the anatomy of man (1543), Sir Michael Foster describes as "the beginning not only of modern anatomy, but of modern physiology." His methods were those of dissection, observation and reasoning. What his eyes saw he believed to be the truth and he proclaimed it as such despite the opposition of those who adhered to the teachings of Galen. Similar methods led to the description by Columbus (1490-1559), of the lesser

circulation, though he did not appreciate the importance of his observation nor its relation to the general circulation of the blood. This illuminating advance was reserved for Harvey, who in 1628 after fifteen years of careful observation and accurate reasoning, described, with the exception of the capillary system, the circulation as we know it to-day. The capillary system, one of the first fruits of the early microscope, Malpighi explained in 1661.

In the meantime, the study of pathological anatomy was limited practically to the study of the curious and the unusual, with no attempt at classification or explanation. From this chaos, Morgagni, known as the "Father of Pathological Anatomy," brought order, by correlating disease with visible changes in the human body and introduced what Virchow has described as "the anatomical thought in medicine." This phase, later, was developed and brought to its acme by Rokitsansky (1804-1878), who may be said to have occupied the same position in pathology that Linnaeus did in botany. The character of his work is summed up by Dr. W. T. Councilman,⁸ as follows: "Even to-day nothing can equal the accuracy of Rokitsansky's observations. There are few things which he did not see. When some lesion or combination of lesions seems entirely new it is often only necessary to go back to the work of Rokitsansky to find that he has observed and accurately described it. Rokitsansky made pathology or pathological anatomy a descriptive science." In this connection, we must remember that Rokitsansky offers also an example of the fallacy of theorizing without proper evidence. In attempting to explain the pathological alterations he so carefully described he had recourse to speculation and elaborated his theory of crasis, which, generally adopted for a time, was finally abandoned.

Meanwhile the foundation of histology had been laid by Malpighi, whose name is familiar to most of you in connection with certain structures of the kidney, spleen and skin; and by Bichat (1801), who using the microscope but little, had studied the composition of the tissues by chemical methods and classified a score of them as osseous, cartilaginous, fibrous, mucous, etc. Later, in the thirties, Schleiden and Schwann and their associates stimulated by the work of Johannes Müller, with the aid of the improved microscope, carried out those detailed studies which brought about a rapid accumulation of knowledge concerning the structure of the constituent tissues of the body and paved the way for Virchow and his "cellular pathology" (1858).

To Virchow we owe our present conception of pathology. The principal result of his labors was the firm establishment of the doctrine of Modern Vitalism, which insists that each cell has a unity and purpose of its own and that the various actions or functions of organs depend on the combined action of such units. This, the "cell theory" developed through the work of Schwann and his successors, Virchow carried into pathology, and by the study of diseased tissue demonstrated that the essential change begins in the cell and that as the result of such changes abnormal function results. As Morgagni traced disease to the organ, and Bichat to the tissues of an organ, so Virchow traced it to the constituent cells. He introduced new methods of studying pathology, insisting not only upon the anatomical description of a lesion, but also upon the investigation of its cause and course and especially of its influence on function. By bringing pathology in closer relation with physiology and embryology, and by introducing the same methods of research which were used in other sciences, he broadened not merely pathology, but medicine generally. As a result of his influence and that of his pupils,—Leyden, Cohnheim, v. Recklinghausen, Waldeyer, Rindfleisch and Kühne—has arisen in Germany what is sometimes termed "The Medical School of Natural Sciences," which seeks by means of pathological anatomy and histology, experimental physiology and pathology, and other applied methods, to make of medicine an exact science. This influence is now felt in medicine the world over and the development of pathology in America may be traced directly to the influence of the men, now leaders in this country, who received their training in this school.

It is in bacteriology above all other branches, however, that the scientific method has demonstrated its value; indeed "we owe the complete medical recognition of the value of pure science to Bacteriology."⁴ The history of its development teems with examples of close observation, careful experiment and accurate reasoning coupled with the exercise of great ingenuity in the development of methods. And this question of methods constitutes one of the most interesting phases of the history of bacteriology as a new science, for methods had to be established before results could be obtained. Cuvier's dictum, "the first question in science is always a question of method," is well illustrated by the history of this subject.

Bacteriology may be said to have originated in the latter part of

the seventeenth century with the observation of Leeuwenhoeck, a linen draper, who during his apprenticeship had learned the art of lens grinding and eventually perfected a lens with which he saw what we now know to be bacteria. The discovery of a disease-producing micro-organism (*B. anthracis*) was not made, however, until 1850; and it was not until the late seventies that the serious study of medical bacteriology began. In the meantime the settlement of the dispute over spontaneous generation, Pasteur's studies of fermentation, and certain observations upon wound infection, had prepared the way for the general acceptance of the "germ theory" of disease. Insufficient methods had heretofore prevented the isolation of organisms in pure culture and therefore, also, the demonstration of their specific relation to definite pathologic conditions. These difficulties Koch overcame by the introduction of solid media (1879) and by the employment of animal inoculation as a test of pathogenicity; and upon these based his postulates of specificity, which have since governed all work in bacteriology. At about the same time improvements in the illumination of the microscope and the introduction of the aniline dyes by Weigert aided also in establishing the young science. Discoveries in etiology followed rapidly; already (1879) Neisser had described the gonococcus and Hansen the bacillus of leprosy; in 1882, Koch announced the discovery of the bacillus of tuberculosis, and Loeffler and Schutz the bacillus of glanders; in 1884, Koch the cholera spirillum, Loeffler the bacillus of diphtheria, and Nicolaier, the tetanus bacillus, and Gaffky his final work on the typhoid bacillus.

Interest in the isolation of new organisms soon gave way, however, to the study of the products of bacteria, the toxins, and then to the development of substances, antitoxins, which would combat these products; so that in 1890 came the announcement of the antitoxin for diphtheria and of the principles of "blood serum therapy." With this work, probably the most triumphant achievement of scientific medicine, we associate especially the names of Behring, Roux, Kitasato and Ehrlich. To bacteriology, in addition to an increased knowledge of etiology and specific therapy, we owe also certain biological methods of diagnosis as the Widal reaction in typhoid fever and the tuberculin and mallein reactions, of value, especially in veterinary medicine. The rapid development of bacteriology stipulated directly the study of protozoa, and undoubtedly influenced Laveran's discovery (1880) of

the plasmodium of malaria and Councilman's investigation (1891) of amoebic dysentery; it led also to new methods of study which have only recently yielded results of great value in connection with that many-sided disease—trypanosomiasis. The greatest value of bacteriology, however, has been seen in its practical application to the problems of public health and its influence upon preventive medicine. The exact knowledge of causative agents and of the manner in which they are disseminated, has led to correct methods of controlling, or stamping out, certain communicable diseases. A most brilliant example of this is seen in the recent freeing of Havana from yellow fever, a disease which had been endemic in that city for hundreds of years. This result was accomplished only through the practical utilization of Reed and Carroll's discovery that the mosquito, as the intermediate host of the excitant, is the essential agent in disseminating the disease—researches which Dr. William H. Welch has characterized as "the most valuable contributions to medicine and public hygiene which have been made in this country with the exception of the discovery of anæsthesia." Many more illustrations of the fruits of bacteriology might be given, but we may say, in brief, that it has taught us in connection with the communicable diseases, etiology, specific treatment and methods of diagnosis and prevention. It is not surprising, therefore, that it has won for science a place in medicine. It has yielded "results entirely beyond the ken of the practitioner; laboratory discoveries which he could only accept but not verify for himself, although in their application he could furnish dramatic proof of their value." So has bacteriology, the youngest child of medicine, become its dictator.

In this brief summary I have traced what may be considered the main line of advance in medicine, wherein each stage has some definite relation to that preceding it. If we wish to amplify the sketch by bringing in important observations not so definitely related, we may do so by fitting in here and there, more or less arbitrarily, certain prominent advances in physiology; as Haller's theory (1708-1777) of irritability, the result of his studies in nerve and muscle physiology, and Sir Charles Bell's (1774-1842) experimental study of the nervous system, both vital to the later work on cerebral localization, also Magendie's (1783-1855) pharmaco-dynamic investigations, Claude Bernard's study of the physiology of digestion and of certain phases of metabolism, and

Helmholtz's application of the principles of physics to the study of physiology.

Let us now turn to the practical branches, clinical medicine and surgery, and follow the influence of the science upon the art of medicine. The history of clinical medicine previous to the eighteenth century is one first of mysticism and superstition, then of theories, systems, schools, fads and "isms" which followed one another in rapid succession, attained more or less prominence and then, in the absence of a definite scientific basis, fell to pieces. The one prominent figure of the seventeenth century was Sydenham (1624-1689), who displaying a most astute scientific habit of mind, urged observation and experience as the guide to treatment. His influence upon medicine, which has been great, was due largely to his appreciation of the "healing power of Nature" and his plea for simple treatment. In contrast to Sydenham, to whose scientific mind medicine owes a great debt, stands Boerhaave (1688-1738) who, recognized as the most famous physician in Europe and controlling all known methods of investigation, contributed little or nothing of essential importance. His chief claim to fame lies in the fact that he permanently established a clinical method in teaching.

The eighteenth century, sometimes called the golden age of medicine, represents the renovation of clinical medicine under the influence of the scientific method. The rise of an experimental philosophy, the freeing of medicine from church influence with the disappearance of the clerical physician, the general revolution against authority as shown by the American and French Revolutions, stimulated independence of thought and the spirit of investigation. This awakening was marked by the revival of the experimental method; in Germany by Haller (1708-1777), in England by John Hunter (1728-1793), and in France by Bichat (1771-1802). The influence of these three men and of Morgagni with his classic work on pathological anatomy (1761) cannot be estimated. A direct result of Hunter's influence was the discovery of vaccination by Jenner. The latter having heard from a milk maid of the protective power of cow pox against small pox, was impressed with the probable value of the routine inoculation of the former disease in the prevention of the latter. While a pupil of Hunter he discussed the subject with him and upon receiving from the great experimenter the characteristic advice, "Do not think; investigate!" he began those observations which gave

to him undying fame and to man protection from a great scourge.

During the last half of the eighteenth and the first half of the nineteenth century the influence of the school of descriptive pathology (Morgagni, Rokitsky) upon clinical medicine is seen in the number of diseases described by clinical men and still known more or less by their names; for example Werlhof, Pott, Heberden, Bright, Addison, Graves, Cheyne, Stokes and Hodgkin. A hundred years later, Virchow exerted a similar influence upon German clinicians, which resulted in the establishment of the school with which we associate the names of Ziemssen, Gerhardt, Nothnagel and Liebermeister.

Of perhaps the greatest importance was the advance made in methods of diagnosis. Previous to the recognition of the value of auscultation and percussion, diagnosis had been based on inspection and palpation and the recital of the patient, aided occasionally perhaps by the counting of the pulse, the use of the simple lens, or the thermometer (Santorini, Boerhaave). Auenbrugger, in 1760, invented and described exhaustively the method of percussion as we now know it. His treatise on the subject, unsalable in his time is now worth its weight in gold, and his method, likewise scorned until 1808 when Corvisart proclaimed its value, is now one of the corner stones of diagnosis. This discovery with that of the stethoscope, first suggested to Laennec by accident and developed after four years (1815-1819) of observation and experiment, allowed for the first time accurate diagnosis of the diseases of the great viscera, especially those of the thorax. It was in this last department that Skoda (1807-1881) excelled; and his work in methods of diagnosis and his knowledge of diseases of the chest led to the establishment in Vienna of the first clinic devoted to such affections.

Indeed, it is in the middle of the nineteenth century that we see the beginning of specialization in medicine, the natural result of an exact physiology and pathology gained by study of special organs and of the introduction of instruments of precision resulting in finer methods of diagnosis. All these factors led naturally to a more rational therapy and while increasing the sum total of medical knowledge limited the field of the individual. Thus the development of dermatology may be traced directly to von Hebra's (1816-1880) study of the pathological anatomy of the skin and the new therapy he based thereon; and

that of ophthalmology to Helmholtz's invention of the ophthalmoscope. Similar factors promoted the differentiation of other specialties. The various methods of endoscopy, the spectroscope, the microscope, the stomach tube, the aid furnished by the application of electricity, the introduction of biological methods, the X-ray, all tended to perfect the art of diagnosis and to add to our knowledge of disease, thus affording the basis for a rational treatment.

One member of the French school of the past century, Louis, famous on account of the introduction of a new method of scientific observation, is of particular interest to us on account of his influence upon American medicine. His new method, now one of the commonest, was that of reaching conclusions by numerical analysis. As the result of this system he was the first to demonstrate the futility of indiscriminate bleeding and blistering; but is probably best known for his great work on fevers, especially typhoid fever. At the time (1829) this last appeared the Paris school was in great favor with American students; Osler⁶ has collected definite records of thirty-seven who afterwards attained more or less prominence at home. To several of these (Gerhard, James Jackson, Jr., George C. Shattuck and Alfred Stillé), stimulated by the influence of Louis's teaching, is due the credit of distinguishing between typhoid and typhus fevers and of definitely establishing the pathology of each—one of the most brilliant pieces of work based on close observation and correct deduction of which we have record in clinical medicine.

To complete this sketch we must take a glance at therapy, the ultimate object, it must be admitted, of all investigations in medicine, though curiously enough the advance in therapeutics has never been commensurate with the general progress. Until a hundred years ago therapy varied according to the prevailing school or system, always, however, with venesection as its sheet anchor and obscured by polypharmacy. This is not surprising, however, when we consider that treatment was limited almost entirely to drugs—the old hygienic teaching of the early Greek physicians was now forgotten—and that the use of these drugs was almost entirely the result of chance, tradition or even of superstition. The manner in which many therapeutic measures arose is indicated in the following summary of Oliver Wendell Holmes' which refers to "a few specifics which our art did not discover, and is hardly needed to apply."

"The credit of introducing *Cinchona* rests between the Jesuits,

the Countess of Cinchona, the Cardinal de Lugo, and Sir Robert Talbor, who employed it as a secret remedy. *Mercury* as an internal specific remedy was brought into use by that "impudent and presumptuous quack," as he was considered, Paracelsus. *Arsenic* was introduced into England as a remedy for intermittents by Dr. Fowler, in consequence of the success of a patent medicine, the Tasteless Ague Drops, which were supposed, "probably with reason," to be a preparation of that mineral. *Colchicum* came into notice in a similar way, from the success of the *Eau Medicinale* of M. Husson, a French military officer. *Iodine* was discovered by a salt petre manufacturer, but applied by a physician in place of the old remedy, burnt sponge, which seems to owe its efficacy to it. As for *Sulphur*, "the common people have long used it as an ointment" for scabies. The modern *antiscorbutic* regimen is credited to Captain Cook. "To his sagacity we are indebted for the first impulse to those regulations by which scorbutus is so successfully prevented in our navy." *Iron* and various salts which enter into the normal composition of the human body do not belong to the *materia medica* by our definition, but to the *materia alimentaria*."

The overthrow of the old therapy began when natural science became an exact study. The precise knowledge of pathological anatomy, the effects of remedies, or rather lack of effect, as shown by Louis's numerical method, a better appreciation of the "healing power of Nature" and of the self limitation of disease, in which the absurd teaching of homœopathy unwittingly played no small part, all awakened a judicious scepticism. Expectancy became the rule of the hour. That disease was an expression of morbid physiology, the natural tendency of which was to self-restoration, became evident to all. For a time therapeutic pessimism, even nihilism, prevailed. Skoda, whose influence against the use of drugs was great, is credited with the statement—"we can diagnose disease, describe it and get a grasp of it, but we dare not expect by any means to cure it." You are probably familiar with some modification of Holmes's statement (1860) that, excepting opium, wine, specifics and anæsthetics, "if the whole *materia medica*, as now used, could be sunk to the bottom of the sea, it would be all the better for mankind,—and all the worse for the fishes." Radcliffe's witticism concerning the evolution of the physician; "When young he had twenty remedies for every disease; when old, twenty diseases for which he had no remedy," with changes in the pronouns characterizes also the evolution of therapeutics.

Now, however, such statements are no longer justifiable. Our present day therapy, though far from satisfactory, is at least more substantial. A review of the rise of therapeutics shows that "The physician as naturalist dissipated speculative therapy; by his habit of thought and mode of action he curbed excesses, destroyed fallacies, and erected new structures. As in diagnosis, so in therapeutics, all advancement, all gain has been made at the hands of the scientist. Scientific doubt first prevailed, scientific action followed. So the art of therapeutics is being replaced by the science; as the art of diagnosis has been replaced by the science. To establish a diagnosis, therefore, and to conduct a judicious and productive therapeutics, two things are required, the scientific habit of mind, and a scientific method of inquiry—the essential in the art of medicine."⁹ It is not my intention to go into the history of therapeutics. The chief lines of progress have been the accurate determination of the physiological action of drugs leading not only to their correct use, but also to a limitation of the number used; the application of methods of treatment other than pharmacotherapy, as rest, diet, climate, the various forms of hydrotherapy, electrotherapy and psychotherapy; the treatment of bacterial diseases by antitoxic sera; and the practical results of the study of organ extracts. Further progress will undoubtedly be along these lines, but in this age of the application of the newer ideas of physics and chemistry to the solution of biological questions prophecy is hazardous.

In a review of surgery up to the close of the eighteenth century one is impressed by the slight progress made in this branch of medicine. This is explained by the fact that surgeons were strictly separated, even in education, from physicians and were not esteemed as equal in rank. Recruited often from among men of little education, deprived of proper special education, classed as barbers and in close association with charlatans, it is not surprising that little that may be termed scientific is characteristic of the surgery of this period. An idea of the standing of the surgeon may be gathered from the rules¹⁰ drawn up by Harvey in 1633 for St. Bartholomew's Hospital. These state that the surgeon shall not treat difficult cases, do any great operation, or give "inward physick" without the approbation of a physician. "How unpleasant was the position of the army surgeon may be inferred from the fact that in 1758 one was subjected to corporal punishment at the command of his colonel, and that a general upon his

death bed could leave orders that fifty blows be given each of his medical staff in case the post mortem disproved the diagnosis." (Park).

The French Revolution with its doctrine of equality aided in leveling this difference of rank, and the establishment in 1785 by Joseph II of Austria of military hospitals and a school for the education of military surgeons exerted a great influence in elevating the social and military position of army surgeons and indirectly the status of surgery in general. This does not mean, however, that the field of surgery had been narrowly limited or was timidly worked. Records of trephining, lithotomy, bronchotomy, extraction of cataract and the operative treatment of aneurism in the third and the seventh centuries are available, while varied operations upon the external surface of the body were frequent. The methods, however, were crude, followed century after century without change and devoid in the main of any scientific basis. It was not until 1545 that the first principles of the control of hæmorrhage were established by Ambrose Paré. In spite of the highest surgical authority of the time, and relying only on his own observations and reasoning, he abandoned the use of burning oil in treating gunshot and other wounds, and eventually gave up the actual cautery in amputations and introduced the ligature for the control of hæmorrhage. This was the surgical event of the sixteenth century.

The following century is notable only for investigation in anatomy; in which, however, the physicians share largely with the surgeons. In this period we find the names of Highmore, DeGraff, Wharton, Glisson, Stenson, Peyer, Brunner, Wirsung, Pacchioni, Havers, Cowper, Bartholin, Meibom, Schneider and many others, all of which you will recognize are now used in anatomy, either in their proper form or as adjectives to designate glands, ducts, membranes or other structures. Unquestionably this increased knowledge of anatomy and the mechanical training gained by careful dissection gave a certain impetus to surgery.

No great advance occurred, however, until John Hunter (1728-1793) made his classical observations upon inflammation, pyæmia, phlebitis, the healing of wounds and the ligation of arteries. To the magic influence of Hunter, who discarded speculation and confined himself to careful observation and skillful experimentation, is due the progress in English medicine which began at a time when German medicine was still enveloped in speculative

philosophy. After Hunter we find no truly essential progress until Lister, alive to the significance of Pasteur's discoveries in the laboratory, made known (1867) the results of his method of treating wounds with carbolic acid. This, the beginning of surgical asepsis and antisepsis, was one of the first fruits of the young bacteriology. In 1873, von Esmarch described his method of producing artificial bloodlessness, and as anæsthesia had been firmly established in 1846, surgery was thus in a quarter of a century robbed of its three great evils, pain, hæmorrhage and infection. Let us also remember that anæsthesia and asepsis brought a timely aid in diagnosis by exploratory operation. If to these factors we add the influence of surgical pathology so highly cultivated by v. Langenbeck and Billroth, the experimental surgery of the former and his improvements in surgical technique, we have the secret of the wondrous development of surgery in the last thirty years. In this development American surgery had taken no small part. The discoverer of anæsthesia by ether was an American general practitioner if we favor the claims of Long, an American dentist, if we prefer to base its discovery on the demonstration by Morton in the wards of the Massachusetts General Hospital. To McDowell, of Kentucky, is due the credit of the first ovariectomy which opened the way for a new branch of surgery, the greatest figure in which has been J. Marion Sims, of New York.

In the course of this summary of the development of the scientific method in medicine I have referred to various influences exerted by the teachings of physics, chemistry, the biological sciences and certain philosophical doctrines. This influence has been so great that it seems worthy of a brief mention. Advances in physiology have been inseparably associated with the increase in knowledge of the laws of physics, for the application of these laws have been an essential aid in experimentation. It is not necessary to enumerate these; the discoveries in optics, electricity, photography, spectrum analysis, the doctrines concerning heat and the correlation and conservation of energy and their relation to physiology are more or less familiar to you. Not only have new avenues and methods of investigation been opened up by these advances in physics, but new instruments of precision have resulted.

In a similar way chemistry, since it emerged from alchemy largely through the genius of Paracelsus, quack and charlatan though he may have been, has by its application to medicine led

to wonderful advances. Among these may be mentioned the perfection of organic analysis and the inauguration of a physiological chemistry both of inestimable value in furthering physiological investigation; exhaustive studies in toxicology, the establishment of a synthetic chemistry and the discovery of organic alkaloids, all of value to pharmacology and therapeutics.

While all philosophy has at various times influenced medical ideas and theories, certain men and their doctrines stand out more prominently than others. Roger Bacon, three centuries in advance of the scientific era, was the first exponent of the experimental method in physiology, and Descartes was the first to propound the fundamental conception of the living body as a physical mechanism. These writers were contemporary with Harvey and it is possible that Bacon may have influenced Harvey, whose work on the circulation appeared two years after Bacon's death; certain it is that Harvey's work was appreciated by Descartes. Progress in physiology since their time has depended largely on Bacon's experimental philosophy and the Cartesian doctrine—principles which remain the distinctive features of modern physiology. Later still we see the influence of the positivism of Comte upon Claude Bernard and the French school. It is generally accepted however, I believe, that the doctrine which has influenced medicine most is that of the biological school represented by Charles Darwin, Herbert Spencer, Ernst Hæckel, and Alfred Wallace. This, the pure science of nature, with its studies in botany, zoölogy, comparative anatomy and physiology, has exerted an influence which can hardly be estimated. In acknowledging this indebtedness, however, we can point on the other hand to discoveries in anatomy, physiology and pathology of no little importance to general biology. Of those who have aided in bringing about a close relation between medicine and the biological sciences none deserves greater credit than Thomas Huxley.

In this brief and necessarily incomplete sketch, I have endeavored to present some of the important phases of the history of medicine and at the same time to emphasize the development and the influence of the scientific method. If, therefrom, you have gained a better appreciation of the profession for which you are preparing, the chief purpose of this address has been accomplished. However, I wish further to utilize this opportunity, which, with the present composition of your faculty will not come to me again for fifteen years, to discuss briefly your relation, first as students

and finally as practitioners, to the scientific method in medicine. Professor Minot's definition of this method I have already quoted. Let me add also Thomas Huxley's characterization of science:¹¹ "Science is, I believe, nothing but trained and organized common sense, differing from the latter only as a veteran may differ from a raw recruit. . . . The vast results obtained by science are won by no mystical faculties, by no mental processes other than those which are practiced by every one of us in the humblest and meanest affairs in life. . . . The man of science, in fact, simply uses with scrupulous exactness the methods which we all, habitually and at every moment, use carelessly."

Why not, therefore, each of you begin at once to use "common sense" in your study of medicine and thus prepare yourself for the scientific practice of your profession? Apply the principles of observation and reasoning to each day's work, each new subject, each new problem. Do not accept the teaching of an instructor until you are satisfied of its truth by personal observation and deduction, or if this is not possible, by a logical presentation which fulfills all requirements and convinces you of its correctness. In the laboratory and in the clinic, your opportunities for observation are equal to those of your instructor; your power of reasoning, at first more faulty than his, will only develop as the result of independent effort and must for a time be guided by his greater experience. You can, however, exercise each independently and though the results may frequently be disastrous, eventually, you will acquire a power of observation and an accuracy of deduction which will make of you an independent worker and not one of the imitative throng. At first many of you will find this difficult, for unless you have worked extensively in the natural sciences your preliminary studies have dealt largely with the results of investigation, verified truths and accepted facts, and as such you have not questioned them. Your state of mind is one of acquiescent receptivity. Like the disciples of Pythagorus, it is enough for you that "The Master has said it." You desire to store knowledge without analyzing it, without asking proof, without attempting to verify with your own powers of observation. Instead, cultivate a judicious scepticism, learn to observe and think for yourself, and above all, when you are in doubt, to say: "I do not know." "I do not know" is the separator which allows you to classify your knowledge in two groups, that which is based on the scientific method and which you label, Truth; and that which is not so

grounded and which you label, doubtful or theoretical. To the former, you should cling as the foundation upon which your knowledge rests; the latter you lay aside, not as useless, but as building material which may at any time become available. I do not mean by this to minimize the value of theoretical conceptions. Hypothesis and theory are intimately associated with the scientific method and naturally precede the demonstration of a truth; but to have an exact knowledge you must not confuse one with the other.

The laboratory and the clinic—these are the two factors in your education; in the first you study “the machines of our bodies,” their structure, functions and products, the alterations produced in them by disease and the causes of these alterations; in the hospital and dispensary, laboratories, also, in the broader sense, you study the results of disturbances of structure and function and learn something of the methods of curing these disturbances, or at least, alleviating some of their manifestations.

In utilizing these methods of instruction you should always bear in mind that “a laboratory is the place for labor, a workshop” and that “every one who is well trained in its methods is a handicraftsman, a skilled workman.”¹² If you attack each problem, each experiment, each disease as if it were being investigated for the first time, and from your point of view it is, you will become familiar with scientific methods, acquire the spirit of investigation and an acquaintance with problems to be solved.

Thus will you gain a knowledge of the principles of the science and art of medicine, correct methods of work, and with the wisdom gained by experience become a capable and independent practitioner. More than this you must utilize your science for the advancement of the sum total of medical knowledge. “Scientific” is no longer opposed to “practical” and the student of science, in medicine as in other branches of learning, is no longer characterized by peculiarities of dress or manner; but is the trained man, the practical physician, who while gaining a livelihood by treating the sick, is ready to utilize every opportunity to advance the knowledge of his profession. Oliver Wendell Holmes’ advice “Take down your sign, or never put it up,”¹³ intended for young physicians interested in investigation, may have applied in 1867, but does so no longer. Science recognizes no close limitations; the contributions of the practising physician may be as important as those of him who devotes his entire time and all his energies

to research, while the undergraduate student may eclipse either by the importance of his laboratory investigations.

Another sentiment of Holmes, frequently quoted, "Science is a first rate piece of furniture for a man's upper chamber if he has got common sense on the ground floor; but if he has not plenty of good common sense, the more science he has, the worse for his patient," is of interest in view of the change which forty years has wrought in our attitude toward scientific methods. Now we accept Huxley's idea that science is "nothing but trained and organized common sense." See, therefore, that you so train and organize your common sense that later you may aid in the advance of your profession and the welfare of the community in which you live; the former, by intelligent and scientific methods of work, the latter, by the application of the same methods to its public health problems. Thus only will you gain that great reward that comes from a good reputation.

And now in conclusion, I wish to suggest for your guidance a motto and a sentiment: the motto of Thomas Huxley, "Tenacity of Purpose," and the sentiment of Dr. William Osler,¹⁴ that in medicine, "the Master-Word is *Work*."

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PYLORIC STENOSIS IN INFANCY; REPORT OF A CASE; GASTROENTEROSTOMY; RECOVERY.

*Read by title before the American Pediatric Society, Detroit, Mich.,
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Since the attention of the medical profession was directed to the clinical features resulting from a stenosis of the pylorus, a large number of cases have been recorded, and the condition is no longer looked upon as an anatomical curiosity.

The following case is of more than usual interest on account of its successful termination after surgical interference:

Esther S., born January 31, 1902, and admitted to St. Margaret's House, January 3, 1903, aged eleven months. She is the second child of Russian Jew parents, whose limited knowledge of English makes a complete history difficult. Both parents are strong and healthy, as is the other child, who is thirteen months older. The pregnancy and labor were uneventful, and the child weighed ten pounds and a half at birth. The mother nursed the baby at the breast exclusively, until the admission to the hospital, although she confessed to having given her a few things to eat from the table after the eighth month. The child gained rapidly in weight during the first three or four months. The exact date when the vomiting commenced is not known. It is supposed to have begun about the fifth or sixth month, but was not regarded seriously, as the mother had been told it was a healthy sign to have the baby spit up after feeding. After this time a little food came up after each nursing.

About the end of November she had an attack of broncho-pneumonia, which was followed by empyema. This was aspirated three weeks before admission, and on account of the vomiting and poor physical condition, she was brought to St. Margaret's House.

On admission, the child weighed fifteen pounds, eight ounces. The body was emaciated, and the skin and mucous membranes pale. The nostrils dilated with each respiration, but there was no cyanosis. The breathing was labored, and the respirations varied from thirty-four to fifty-four a minute. The temperature ranged from ninety-nine to 101.5, and the pulse was strong and regular, numbering from 100 to 140 beats a minute. The lower border of the liver and the spleen were palpable. The left lung was slightly bulging and

flat on percussion. The apex beat was one inch to the right of the nipple line in the fifth interspace. The breath sounds could be plainly heard over the area of dullness. The examination of the blood showed thirty-five per cent. hemoglobin, 21,700 leukocytes, 5,144,000 red corpuscles. Smears from the pus showed streptococci. A rubber drainage tube was inserted on January 23 and removed February 10, when the lung symptoms cleared up.

The most unpleasant feature of the case was the persistent vomiting. A portion of each feeding would be rejected from ten to thirty minutes after each bottle. Very often she would hold the regurgitated food in her mouth for several minutes, and again attempt to swallow it. Lavage was faithfully kept up twice a day for three weeks, without any influence on the vomiting, and for two weeks all the food was administered through a stomach tube without success. The food itself was changed in composition and in the amount and frequency of feeding with no effect on the vomiting. Fluids were withheld and only semi-solid nourishment given, and the food was predigested without helping the condition. Many vaunted medicinal remedies were administered without benefit. The child seemed ravenously hungry, and always took the food with great eagerness.

In five months she lost three pounds and six ounces, and was greatly emaciated. The stomach contents were examined a number of times, but no free hydrochloric acid or lactic acid was detected. The vomiting material was always curdled and sour, but it was never tinged with bile. The bowels were always very constipated, and high enemas were given daily. The movements themselves were hard and scybalous. The abdomen was sunken and the peristaltic movements plainly seen. The stomach was dilated and extended down to about the level of the umbilicus. Repeated examinations failed to detect a tumor of the pylorus.

The diagnosis of pyloric stenosis was based on the incessant vomiting, dilated stomach, constipation, absence of bile in the vomited matter, and steady loss in weight. In view of the futile attempts to alleviate the condition by medical treatment and the apparently hopeless state of the child, permission was granted for an operation. The operation was performed on June 8, 1903, under ether narcosis, by Dr. Elting.

A median incision eight centimetres long was made from the ensiform process downward. The abdominal wall was extremely thin, the abdominal muscles atrophic. Immediately on incising the peritoneum, the greatly dilated stomach presented in the wound. Examination of the pylorus showed it to be very firm and thickened for a distance of two and one-half centimetres. The transverse diameter of the pylorus was about two centimetres. The lumen appeared to be greatly reduced and the stenosis pronounced. There were no adhesions about the pylorus, and no evidence of an inflammatory process, the peritoneum being smooth and glistening. The stomach was at least four times its normal size. The walls were extremely thin. A loop of the jejunum was drawn up, and at a

point about forty centimetres from the duodenum an anterior gastro-enterostomy was performed after the method of Kocher, according to which a spur is made in the jejunum and the intestine is attached transversely to the lowest part of the anterior wall of the stomach. Catgut was used to unite the mucous surfaces, and over this two layers of continuous silk sutures.

The introduction of the sutures into the stomach and bowel was rather difficult, because of the paper-like thinness of the walls of these viscera. The operation was completed with a minimum of handling of the stomach and intestine in order to avoid shock. The peritoneum was closed with continuous catgut. The fascia and muscle were closed with interrupted catgut, and the skin with subcutaneous catgut. The time of the operation was forty-five minutes. The patient appeared to be in as good condition after the operation as before, which, however, was decidedly bad. During the night previous to the operation, the nurse in attendance on two or three occasions thought the child dying, but it was revived by means of injections of brandy and strychnine. The wound healed per primam, and has remained firm and strong ever since.

Subsequent History.—Shortly after the operation she vomited blood. On June 9 was given a bottle of peptonized milk and barley, which was retained. She vomited some bile during the day. The food was gradually increased, and a number of bottles were retained, although she would vomit several times a day. A soft yellow stool was returned after an enema on June 14. The first soft spontaneous movement was on June 18. The child improved steadily, and after four weeks the vomiting occurred only occasionally. The food was increased gradually, and the child gained steadily in weight, and left St. Margaret's on December 17, weighing 22½ pounds. Nine months later she weighed 30 pounds, and seemed perfectly well. The weight chart shows the rapid and steady gain after the operation.

Stenosis of the pylorus in infants is not a very rare or unusual condition. Cautley and Dent, in an essay read before the Medicochirurgical Society, of London, in 1902, appended a bibliography of 109 references.

They collected 69 cases, and in 19 of these an operation had been performed. We have searched the literature up to August, 1904, and have found 66 cases in infants under twelve months in which the diagnosis was confirmed by autopsy; 12 cases in which no autopsy was reported; 27 cases diagnosed as pyloric stenosis, but ending in recovery, and 40 cases in which a surgical operation had been performed, making 145 cases in all. These cases are nearly all reported by specialists, so that it is fair to presume that the oft-misused and misunderstood diagnosis of marasmus has been given to describe the condition without any recognition of the underlying cause.

We propose to discuss only briefly the pathogenesis of this disease. In order to better appreciate this condition, we will review a few of the theories that have been advanced, and consider certain points in the anatomy of the parts involved.

The stomach has only slight powers of absorption or assimilation, and is more a motor than a digestive organ. The muscular tissue is made up of three sets of fibres, all of which extend to the pylorus. The stomach proper has also a secretory function, but the work of pylorus is chiefly motor.

The circular set of muscular fibres are greatly increased at the pyloric orifice, forming what is called the sphincter pylori. The cardiac end has no special sphincter, and gas and liquids can readily pass through it during digestion. The mucous membrane at the pylorus is thicker and forms a fold known as the pyloric valve. There are traces at the pars pylori of a second gastric chamber in the bulging called the antrum pylori. The gastric cells and tubules in the neighborhood of the pylorus differ in construction and function from those located elsewhere in the stomach.

The pyloric region is essentially one of considerable structural variability. The pneumogastric nerves supply both motor and sensory filaments. Bechterew has shown that by irritating one branch of the pneumogastric, without interfering with the others, the cardiac end of the stomach will dilate, while the stomach and the pylorus remain contracted. This proves that each portion of the stomach has its special nerve filament. The splanchnic nerves connect the stomach with the sympathetic nervous system. The pylorus has the power within itself of contraction or dilation, and the contraction is always increased by the ingestion of food.

A stenosis of the pylorus may occur, according to some authors, as a congenital malformation. The circular muscular fibres are excessively developed, producing a violent contraction of the sphincter with the resulting retention and subsequent vomiting. In other words, the claim is made that this is a primary condition where "Nature, in her extreme anxiety to provide an efficient pyloric sphincter, has over-exerted herself, and has produced too great a quantity of muscular tissue." Flynn points out the similarity of the pylorus with the gastric mill in insects and crustacea and with the gizzard in birds. He thinks that hypertrophic stenosis is a reversion to the edentate pylorus as seen in the armadillo, or the great ant eater, and quotes Darwin as saying that "certain

structures regularly occurring in the lower members of man's own class occasionally make their appearance in him, though not found in the human embryo; or, if normally present in the human embryo, they become abnormally developed, although in a manner which is normal in the lower members of the group."

If the hypertrophy were congenital and primary the vomiting ought to commence soon after birth. As a matter of fact, this occurs only rarely, and in the large majority of cases the first vomiting is not noticed until the child is several weeks old. In our case the vomiting did not begin until the child was five or six months old. This explanation cannot account for all the cases, as Ballantyne, whose knowledge of fetal pathology is very extensive, has never seen an hypertrophied pylorus in the fetus.

Pfaundler advanced a theory about six years ago in which he denies the existence of any hypertrophy, and claims the entire symptom complex is produced by a spasm of the pylorus without any hypertrophy or stenosis. He based his conclusions on the result of postmortem studies on the stomach of infants. He frequently found that the pylorus was firmly contracted and presented all the appearances of pyloric stenosis. This condition he termed a functional *systolic* stomach in contradistinction to the relaxed or *diastolic* stomach. Undoubtedly, many cases of pylorospasm or functional spastic stenosis without hypertrophy exist and include many of those reported as pyloric stenosis which make a good recovery. That this does not explain the severe and fatal cases is shown in the reports of the 86 cases in which an autopsy was performed, where the pylorus was invariably found greatly thickened. Accurate measurements and histological sections were made in many of these cases. A functional spasm of the pylorus would relax under anesthesia, but this was not observed in any of the operated cases.

The most plausible view, and one held by many authors, is that the hypertrophy is secondary and a result of overaction on the part of the pylorus. Such a condition is sometimes found in adults as a result of a reflex spasm occurring in *ulcus ventriculi* or hyperacidity. In infancy the condition is more likely due to increased irritability of the nervous mechanism or hyperacidity,* and from the overaction of the pylorus the muscular fibres are increased and hypertrophied and the lumen diminished. Larkin

* Examinations of one hundred and nineteen stomach contents made in the summer of 1903 showed a total acidity ranging from two to thirty-six and free hydrochloric acid in thirty-five cases. (Shaw.)

showed in the microscopical examination of the pylorus in his case that there was not only a marked hypertrophy of the muscular fibres, but also an increase in the connective tissue between the muscular fibres. John Hunter pointed out many years ago that hypertrophy from repeated forcible contractions is common to all muscles, but is greater in involuntary than in voluntary muscles. This explanation coincides with the clinical history of most all of the cases where the vomiting begins several weeks after birth and grows progressively worse.

The chief symptom of this condition is the vomiting. It occurs from ten to fifteen minutes after taking the food. Diminishing the quantity of the food or changing its strength or character has no effect. Most of the reported cases have been in breast-fed babies. It resists treatment by lavage and medicinal remedies. A characteristic feature is that the vomited material is never tinged with bile. In the majority of cases no free hydrochloric acid was found, but Freund found it present in 3 of his cases. One of these contained free hydrochloric acid before the operation and none was detected after the operation. The abdomen in these cases is never distended as is seen so frequently in chronic indigestion, but is sunken and relaxed. This permits the peristaltic movements of the stomach to become visible. The stomach becomes greatly dilated, and its outlines can be clearly seen through the thin abdominal walls. In many cases a distinct enlargement of the pylorus can be detected on palpation.

Constipation invariably results from curtailment of the food and fluid supply to the intestines. The movements are small in amount and are hard and scybalous. The urine is also diminished in quantity. The uncontrollable, long-continued vomiting, without any symptoms of dyspepsia or indigestion, dilated stomach, emaciation, lax and sunken abdominal walls, obstinate constipation, and, perhaps, an enlarged pylorus, produce a symptom complex not difficult to recognize.

The prognosis is grave. Only 27 out of 104 cases treated medically recovered, which gives a mortality of 72 per cent. Seventeen out of the 39 cases treated surgically recovered, giving a mortality of 56 per cent. It would seem from the statistics that the surgical treatment gives more chance of recovery than purely medical treatment.

The medical treatment should be commenced as early as possible in order to control the spasm before the hypertrophy results.

The food should be given at frequent intervals and the stomach washed out once or twice a day. Changes can be made in the composition of the food, but experiments along this line are not always beneficial. A breast-fed infant should not be entirely deprived of its natural nourishment, but a "two-milk" diet can be instituted with a few bottles of artificial food. As some cases of pylorospasm are due to hyperacidity, it might be well to follow the advice of Knöpfelmacher and administer small amounts of undiluted cow's milk. To this could be added citrate of soda as recommended by Poynton. Small doses of cocain before each bottle may give temporary help, but both the medicinal and the dietetic treatment will often prove unsatisfactory. High rectal irrigations of normal salt solution should be given daily in order to supply fluid to the tissues and to remove the hard constipated feces. Surgical treatment should be instituted when the diagnosis has been verified, so that the child will not be too debilitated and emaciated to withstand the shock.

That medical treatment of cases of pyloric stenosis in children has been unsatisfactory is shown by the relatively large number of autopsies upon cases of this description reported in the literature. Most pediatricists are agreed that in the majority of the cases of pyloric stenosis in the infant, surgical treatment is indicated. The first operation for the relief of this condition was performed by Stern, June 3, 1897. In this case a gastroenterostomy was done and the patient died. The first successful operation for this condition, also a gastroenterostomy, was performed by Löbker, July 25, 1898. We have collected from the literature reports of forty operations upon infants with pyloric stenosis. Of these cases one was simply an exploratory incision, at which no attempt was made to relieve the condition, and the patient died. Another was a pylorotomy, and this patient also died. Of the remaining 38 cases 19 were gastroenterostomies, of which 7 recovered and 12 died, a mortality of 63 per cent.; 8 were pyloroplasties, of which 5 recovered and 3 died, a mortality of 38 per cent.; 11 were divulsions of the pylorus, the so-called "Loreta operation," of which 5 recovered and 6 died, a mortality of 55 per cent.

From the above, it appears that four different operations have been proposed and practised—pylorotomy, pyloroplasty, divulsion of the pylorus and gastroenterostomy. Pylorotomy can without question be excluded from the list of possible and practicable operations in such a condition; first, because there is no in-

dication for the excision of the pylorus, and secondly, because in such weakened children an operation of this magnitude is almost certain to prove fatal. Of the three remaining methods of operation, the two which appear most rational and feasible are those of pyloroplasty and gastroenterostomy. Divulsion of the pylorus or, as it is more commonly known, "Loreta's operation," may offer temporary relief, but there is always a strong possibility of a recurrence of the stenosis and the danger attending this operation is quite as great as that of either pyloroplasty or gastroenterostomy. "Loreta's operation" upon the adult has not been of great value, and is to-day done only infrequently, and the same arguments advanced against its practicability in the adult would, we think, hold equally well in the infant.

Pyloroplasty, theoretically and practically, appears to have much in its favor, especially in the relative ease of its performance in many cases. There are, however, certain objections which can be raised against it, especially the possibility of the development of adhesions about the pylorus which might subsequently seriously interfere with its function. Furthermore, we believe that the technical difficulties as well as the dangers of this operation are quite as great as are those of gastroenterostomy. In our judgment there is more to be said in favor of gastroenterostomy than of any other operation yet proposed for the cure of this condition. In the first place, it relieves the pylorus of the irritation of the food and gastric juices, which appear in some instances to be an important factor in the production of the stenosis. This irritation removed, it is fair to assume that the lumen of the pylorus would become increased and more or less of a normal function allowed. We would emphasize especially the necessity of avoiding handling the stomach or intestines more than is absolutely necessary, because this undoubtedly contributes largely to the shock of the operation. To this end it would seem more advisable to employ a method of anterior gastroenterostomy, which can be easily and quickly performed with a very minimum of handling of the abdominal viscera, and practically as quickly as pyloroplasty. It is also advisable to administer nourishment by the mouth very soon after the operation, for these patients are always greatly reduced and in immediate need of nourishment. Experiment and practice have shown that this can be safely done without danger to the integrity of the anastomosis and with certain benefit to the patient.

In conclusion, we believe that the following generalizations can be made:

(1) That pyloric stenosis in the infant is of much more frequent occurrence than is commonly supposed.

(2) That medical treatment of these cases has proved uncertain and unsatisfactory.

(3) That surgical interference should be practised before the strength and vitality of the patients have become seriously reduced.

(4) That pyloroplasty and anterior gastroenterostomy are the operations of choice.

LIST OF REPORTED CASES OF PYLORIC STENOSIS IN INFANTS

MEDICAL CASES

Cases in which an autopsy was made which confirmed the diagnosis.

Author.	No. of Cases.	Date.	References.
BEARDSLEY	1	1788	<i>Archives of Pediatrics</i> , 1903.
WILLIAMSON	1	1841	<i>London and Edinburgh Monthly Journal of Medicine</i> .
DAVOSKI	1	1842	<i>Casper's Wochenschrift f. d. ges. Heilkunde</i> .
PEDEN	1	1889	<i>Transactions Glasgow Pathological and Clinical Association</i> , 1892.
HIRSCHSPRUNG	2	1888	<i>Jahrbuch für Kinderkrankheiten</i> , 1888 and 1901.
HENSEHEL	3	1891	<i>Archiv für Kinderheilkunde</i> .
PITT	1	1892	<i>Transactions Pathological Society of London</i> .
TILGER	1	1893	<i>Virchow's Archiv</i> .
GRAN	4	1896	<i>Jahrbuch für Kinderkrankheiten</i> .
FINKELSTEIN	4	1897	<i>Jahrbuch für Kinderkrankheiten</i> .
		1896	<i>Berliner klinische Wochenschrift</i> .
SCHWYZER	2	1896-7	<i>New York medicinische Monatsschrift</i> .
ASHBY	2	1897	<i>Archives of Pediatrics</i> .
DE BRUN KOP	1	1897	<i>British Medical Journal</i> .
FENWICK	2	1897	<i>Disorders of Digestion</i> , p. 315.
STERN	1	1890	<i>Deutsche medicinische Wochenschrift</i> .
ROLLESTON	1	1898	<i>British Medical Journal</i> .
BATTEN	1	1899	<i>London Lancet</i> .
STILL	3	1899	<i>Transactions Pathological Society of London</i> .
PRITCHARD	1	1900	<i>Archives of Pediatrics</i> .
FISHER	1	1900	<i>British Medical Journal</i> .
LARKIN	1	1901	<i>Proceedings of the New York Pathological Society</i> .
SCHULTZE	1	1901	<i>Ibid</i> .
THOMSON	8	1902	<i>London Lancet</i> .
SAUNDERS	1	1902	<i>Archives of Pediatrics</i> .
NORDGREN	2	1902	<i>Eira. ref. Monatsschrift für Kinderheilkunde</i> .
RIVIERE	1	1902	<i>London Lancet</i> .
SELTZ	2	1902	<i>Monatsschrift für Kinderheilkunde</i> .
FREUND	3	1903	<i>Mitt. aus den Grenz. der Med. u. Chir.</i>
WEST	1	1903	<i>Archives of Pediatrics</i> .
SHAW	1	1903	<i>Brooklyn Medical Journal</i> .
CAUTLEY	6	1904	<i>British Journal for Children's Diseases</i> .
BERNHEIM	1	1904	<i>Korresp. für Schweiz. Aerzte</i> .
SCHOTTEN	1	1904	<i>Sammlung klinische Vorträge, Leipzig</i> .
CLEVELAND	1	1904	<i>British Medical Journal</i> .
FISHER	1	1904	<i>Bristol Medico-Chirurgical Journal</i> .
NEILD			
DÖRNING	1	1904	<i>Archives of Pediatrics</i> .

LIST OF REPORTED CASES OF PYLORIC STENOSIS IN INFANTS (*Continued*)*Fatal cases in which no autopsy was reported.*

<i>Author.</i>	<i>No. of Cases.</i>	<i>Date.</i>	<i>References.</i>
HENSCHEL	2	1888	<i>Jahrbuch für Kinderkrankheiten.</i>
FINKELSTEIN	3	1896	<i>Jahrbuch für Kinderkrankheiten.</i>
STERN	2	1898	<i>Deutsche med. Wochenschrift.</i>
THOMSON	3	1902	<i>London Lancet.</i>
SALMON	1	1903	<i>Monatsschrift für Kinderheilkunde.</i>
CARIOT	1	1903	<i>Gaz. des Mal. Infants.</i>
	12		

Cases diagnosed as Pyloric Stenosis, but ending in recovery.

FINKELSTEIN	3	1896	<i>Jahrbuch für Kinderkrankheiten.</i>
SENATOR	1	1897	<i>Berliner klin. Wochenschrift.</i>
STILL	1	1895	<i>Transactions Pathological Society of London.</i>
COATES	1	1900	<i>Archives of Pediatrics.</i>
KNOFFELMACHER	1	1901	<i>Wiener klin. Wochenschrift.</i>
SAUNDERS	4	1902	<i>Archives of Pediatrics.</i>
BURGHARD	2	1902	<i>London Lancet.</i>
GARDNER	1	1903	<i>London Lancet.</i>
KOPLIK	3	1903	<i>Diseases of Infancy and Childhood.</i>
SCHOTTEN	3	1904	<i>Sammlung klinische Vorträge, Leipzig.</i>
VARIOT	2	1903	<i>Gaz. des Hop.</i>
IBRAHIM	4	1903	<i>Jahrbuch für Kinderkrankheiten.</i>
CONITZER	1	1904	<i>Münchener med. Wochenschrift.</i>
STAMM	2	1904	<i>Münchener med. Wochenschrift.</i>
	27		

SURGICAL CASES
Gastroenterostomy.

<i>Physician.</i>	<i>Surgeon.</i>	<i>Age.</i>	<i>Died.</i>	<i>Time After Operation.</i>	<i>Re-covered.</i>	<i>References.</i>
Stern		5 weeks	1	24 hours		<i>Deutscher med. Wochenschrift, 1897.</i>
Adler	Meyer		1			<i>Medical Record, 1898.</i>
Meltzer			1			<i>Medical Record, 1898.</i>
Abel	Kehr	8 "			1	<i>Münchener med. Wochenschrift, 1899.</i>
Thomson	Stiles	5 "	1	24 "		<i>British Medical Journal, 1902, p, 1,874.</i>
Monnier	Fritzsche				1	<i>Dissert., Zurich, 1900.</i>
	Löbker		1			<i>Vers. deutsch. Gesell. f. Chir., 1900.</i>
	"				1	<i>Vers. deutsch. Gesell. f. Chir., 1900.</i>
	Kehr				1	<i>Vers. deutsch. Gesell. f. Chir., 1900.</i>
	Trautenroth	5 "			1	<i>Mitt. aus den Grenz. der Med. u. Chir., 1902.</i>
Mackay	Mackay	4 mths.	1	36 "		<i>Intercolonial Medical Journal, 1903.</i>
Ibrahim	Jordon		1			<i>Münchener med. Wochenschrift, 1903.</i>
"	"		1			<i>Münchener med. Wochenschrift, 1903.</i>
Freund	Mikuliz	9 weeks	1	5 mths.		<i>Mitt. aus den Grenz. der Med. u. Chir., 1903.</i>
Greef	Bull		1	12 hours		<i>Archives of Pediatrics, 1903.</i>
Gallant			1			<i>Archives of Pediatrics, 1903.</i>
Schotten	Jackhs	35 days			1	<i>Sammlung klinische Vorträge, 1904.</i>
"	Braun	45 "	1	20 "		<i>Sammlung klinische Vorträge, 1904.</i>
Shaw	Elting	16 mths.			1	
				12	7	Mortality, 63 per cent.

SURGICAL CASES

Pylorotomy.

Physician.	Surgeon.	Age.	Died.	Time After Operation.	Re-covered.	References.
Thomson	Stiles	8 weeks	1	10 hours		<i>British Medical Journal</i> , 1902. Mortality, 100 per cent.

Pyloroplasty.

Lange	Brissand Brann	6 weeks				
		9 "	1	20 hours	1	<i>La Semaine Medicale</i> , 1900. <i>Münchener med. Wochenschrift</i> , 1901.
Granboorn	MacGillavry	4 "	1	6 weeks		<i>Monatsschrift für Kinderheil</i> , 1902.
Cautley	Dent	8 "	1	3 mths.		<i>British Journal for Diseases of Children</i> , 1903.
"	"	6 "			1	<i>British Journal for Diseases of Children</i> , 1903.
"	"	7 "			1	<i>British Journal for Diseases of Children</i> , 1903.
"	"	5 "			1	<i>British Journal for Diseases of Children</i> , 1903.
Guthrie	Murray				1	<i>London Society for the Study of Diseases in Children</i> , 1902.
			3		5	Mortality, 38 per cent.

Divulsion of the Pylorus (Loreta's operation).

Ritchie	Nicoll Schmidt	6 weeks			1	<i>British Medical Journal</i> , 1900.
		8 "			1	<i>Arch. f. klin. Chir., Langenbach</i> , 1901.
Still	Burghardt	8 "			1	<i>British Medical Journal</i> , 1901.
Thomson	Stiles	3½ "	1	48 hours		" " " " 1902.
"	"	4 "			1	" " " " "
"	"	5 "	1	2 weeks		" " " " "
"	"	11 "			1	" " " " "
"	"	5 "	1	36 hours		" " " " "
"	"	3 "		4 days		" " " " "
Mackay	Mackay	6 "	1	12 hours		<i>Intercolonial Medical Journal</i> , 1903.
London	Wigg	6 "				<i>Australia Medical Gazette</i> , 1902.
			6		5	Mortality, 55 per cent.

NOTE.—Küster opened the abdominal cavity in one of Schotten's cases, but did not perform a gastroenterostomy as intended, on account of the feeble condition of the child.

Editorial

"Very true, Major Hartmann, very true, sir; a prudent man will always strive to make his remedies agreeable to the eyes, though they may not altogether suit the stomach. It is no small part of our art, sir," and he now spoke with the confidence of a man who understood his subject, "to reconcile the patient to what is for his own good, though at the same time it may be unpalatable."

The Pioneers.

J. FENIMORE COOPER.

The Parathyroid Glands.

The functions of ductless glands promise almost endless speculation and inquiry. The latest group to arrest attention, so small and so closely allied with the thyreoid as to be inseparable during surgical operations, and only discernible with difficulty at autopsy, are the parathyreoids. Yet these small bodies have already entered the field ripe with pathological possibilities.

Sandstrom, in 1880, discovered the parathyreoid glands, which he believed to be embryonal remnants. Gley, in 1891, reported that experimental tetany was produced in guinea-pigs by the extirpation of these glands, independently of the thyreoid. The parathyreoid glands are constant in man and in the higher animals, and lie upon the third and fourth maxillary arches. It is possible that these glands may be removed in operations upon the thyreoid, and induce symptoms which have been attributed to the latter, but careful experiments have shown conclusively that tetany follows removal of the parathyreoids and not of the thyreoid, when the former are spared.

Jeandelizé, in 1902, claimed that insufficiency of the thyreoid secretion was followed by chronic affections of nutrition, and of the parathyreoid by acute spastic conditions. Biedl, in 1904, differentiated the secretions of the thyreoid and parathyreoids, and attributed myxœdema and nutritional defects of growth (cretinism) to absence of the former, and tetany to those of the latter. The distinction between the glands must be made, as many of the results attributed to extirpation of the thyreoid have really been due to unwitting removal of the accessory bodies at the same time. The proved important function of these glands has assigned several diseased conditions to insufficiency, as convulsions in infancy, tetany, certain cases of epilepsy and eclampsia; and lately, exophthalmic goitre, and occupation tetany. As tetany occurs in certain regions and in certain trades, as shoemakers and tailors, and is of the character of an infection, it has been urged that the attitude of the workers has interfered with the circulation in the neck and

has disturbed the function of these glands. Analogously, organisms may be assumed in cases in which the parathyroids are not present or are incompletely developed. The former condition is incompatible with life, but to the latter numerous symptoms may be charged, as convulsions, tetany and laryngeal spasm during infancy. Possibly the tendency to spasm in dentition may be promoted by this defect.

The question arises as to whether there exists a disease characteristic of hypoparathyreoidismus. In an interesting contribution to which we are indebted for the above synopsis of the subject, Herman Lundborg (*Deutsche Zeitschrift für Nervenheilkunde*, 9 November, 1904,) seeks an answer to this question. He believes that congenial myotonia fulfils the requirements. Both tetany and myotonia present conditions of intoxication as shown by nervous irritability. Myoclonus-epilepsy is an analogous state, as is paralysis agitans. There is great similarity between paralysis agitans and myxœdema. Both appear at about the fortieth year and develop slowly; both show atypical forms; both proceed gradually to a cachexia; both show mental disturbance; in myxœdema may appear tremors, clonic spasm, tetany, epileptiform attacks and rigidity of the muscles.

Lundborg then seeks an antithesis to paralysis agitans, that is, a disease presenting symptoms of a reverse character, and bearing the relation to paralysis agitans that exophthalmic goitre bears to myxoedema. He believes myasthenia gravis is such disease, for the following reasons: (1) The symptom-complex of the two conditions is similar; (2) occasionally doubtful cases are seen in which the differentiation cannot be made; (3) certain symptoms, as exophthalmos and tachycardia, occur in both; (4) an abortive form of exophthalmic goitre resembling the bulbar neurosis is occasionally seen; (5) the presence of one of these diseases predisposes to the other.

The parathyreoid glands thus seem to regulate the tone of the muscles or of the neuro-muscular system. The thyroid gland, on the other hand, has to do with mental conditions and certain trophic functions. It may then be assumed that the same pathological process does not differ in intensity when certain combinations of diseases exist, but rather that both series of glands are involved, as when myxœdema and paralysis agitans, or exophthalmic goitre and myasthenia gravis, are associated. Possibly over-activity in one organ may occur with under-activity in the other, as when exophthalmic goitre and paralysis agitans or tetany are seen synchronously.

Scientific Review

EXPERIMENTAL SYPHILIS.

1. Etudes expérimentales sur la syphilis,
METSCHNIKOFF ET ROUX,
Annales de l'Institut Pasteur, 1903, XVII, 809.
2. Etudes expérimentales sur la syphilis,
METSCHNIKOFF ET ROUX,
Annales de l'Institut Pasteur, 1904, XVIII, No. 1
3. Anatomie pathologique des lésions syphilitiques observées chez les singes anthropoïdes,
ARNAL ET PAUL SALMON
Annals de l'Institut Pasteur, 1904, XVIII, No. 7
4. Ueber eine Weiter-impfung von syphilitisch-inficirten Chimpanzen,
O. LASSAR,
Berliner klinische Wochenschrift, 1904, No. 52, 118
5. Sur l'inoculation de la syphilis an singe,
C. NICOLLE,
Annales de l'Institut Pasteur, 1903, XVII, 636.
6. Einige Syphilis-Uebertragungs-versuche auf Tiere,
NEISSER UND VEIEL,
Deutsche medicinische Wochenschrift, 1904, No. 1.
7. Meine Versuche fur Uebertragung der Syphilis auf affen,
A. NEISSER,
Deutsche medicinische Wochenschrift, 1904, Nos. 38 and 39, 1369.

It has long been recognized that in order to reach a satisfactory solution of many of the problems relating to syphilis, it is necessary first of all to find an animal susceptible to the syphilitic virus. The literature contains numerous records of experiments in which many species of the lower animals were innoculated with syphilitic virus with little or no success. Anzias and Turenne in 1866 claimed that they had produced syphilitic papules and mucous patches in a cat. The following year Legros and Lance-reaux described syphilitic lesions in a guinea pig inoculated with a fragment of an indurated chancre. Then followed a series of experiments upon swine. Martineau inoculated a young pig with pus from a chancre durum and observed later a parchment-like induration at the site of inoculation. Adrian published a similar experiment. In an effort to confirm these results Neisser in 1902 inoculated eighteen swine, but obtained only one skin lesion at

all analogous to secondary syphilis, while its histological structure was not at all typical. The first experiment with an ape was made by Klebs in 1879. The inoculation was made with fragments of a chancre durum and was followed in six weeks by a papular eruption over the body. Martineau and Homonic in 1882 inoculated an ape and two indurated chancres developed followed in four weeks by enlargement of the lymphatic glands and ulcerations of the palate. Of forty-six apes, including several different species, Sperk in 1886-'8 was able to inoculate only a few successfully with syphilis. In one a chancre durum developed in twenty-one days, followed one month later by a papular eruption. A second ape, inoculated from the first, and a third ape, inoculated from the second, developed syphilitic-like ulcerations. Not all the experiments with the apes have resulted as favorably as those cited above. A great many experiments have failed. Mosse, Kreshaber, Fournier and Barthelémy were unable to inoculate apes successfully.

Metschnikoff and Roux explain these divergent results as in part due to the fact that the investigators have not indicated precisely the species of ape used. In 1903 C. Nicolle published the results of some experimental inoculations, made with M. Nicolle in 1893, upon a species of ape known as the *Macacus Sinicus*. In three apes papulo-squamous lesions developed at the site of inoculation after an incubation period of fifteen to twenty days. In one ape enlargement of the lymphatic glands was present, in another alopecia. Homonic, in a recent communication to the Academy of Medicine in Paris, reports the successful inoculation of another species of ape known as the *Macacus Cynomolgus*. Metschnikoff and Roux also successfully inoculated an ape of the species *Macacus Sinicus*.

From these experiments it can be concluded that only certain species of the apes are immune to syphilis. The *Macaci Sinicus* and *Cynomolgus* are, however, susceptible to the virus but not markedly so. There is still another group of anthropoid apes known as *Troglodytes* which Huxley has shown by comparative anatomy to approach more closely the human organism. In this group are the chimpanzee, gorilla and orang-outang. Nuttall found in studying the haemolytic, agglutinative and precipitant substances of these animals that animal serum treated with human serum, showed the same properties against the blood and serum of these anthropoid apes as against human blood and serum. The

chimpanzee, gorilla and orang-outang therefore were assumed by reason of their close relationship to the human organism, to be more susceptible to syphilis.

Metschnikoff and Roux used in their first experiment a female chimpanzee (*Troglodytes Niger et Calvus*). Inoculations were made at three points: (a) preputium clitoridis, with serum from a chancre durum of one month's duration; (b) right superciliary arch, from a newly developed mucous patch; (c) after five days had elapsed the left preputial fold was inoculated with material from a chancre durum of three days' duration. On the 26th day after inoculation a sharply circumscribed vesicle developed on the right preputial arch which gradually became indurated. Later lymphatic hyperplasia developed on the same side. The syphilitic nature of the lesions was verified at the Academy of Medicine by Fournier, du Castel and Hallopeau. Fifty-six days after inoculation papulo-squamous lesions developed on the dorsal and ventral surfaces and on the thigh and bore a close resemblance to human syphilides. There was also a general lymphatic enlargement. The animal died suddenly sixty-nine days after the appearance of the chancre. The autopsy showed general enlargement of the lymphatic glands and the spleen. The microscopic examination of the chancre showed an ulcer, secondarily infected. The specific nature of the lesion was not clear. Sections made from the secondaries showed them to be in process of healing. There was an increased formation of connective tissue, with a perivascular accumulation of mononuclear leucocytes. A second chimpanzee (male) was inoculated from the first at two points: (a) into the penis, with material from the chancre durum; and, (b) into the left thigh, with scrapings from papulo-squamous syphilide. After an incubation period of thirty-five days erosions developed on the penis and thigh, accompanied by hyperplasia of the lymphatic glands. The ulceration on the thigh developed into a typical chancre durum of the skin. The animal died of influenza on the seventieth day after inoculation. At autopsy no specific lesions of the internal organs were found. Sections from the lesion on the thigh showed the epidermis thinner than usual over the center of the lesion. The malpighian layer formed elongated projections into the deeper subepithelial tissue. The dermis was œdematous and contained fibrin, small mononuclears and plasma cells arranged around the bloodvessels. An endophlebitis was present in one of the small superficial veins of the dermis

with a proliferation of the endothelial cells obstructing the lumen. Numerous pigmentophages were also present in the inflammatory zone, containing pigment similar to that found in the skin. Histologically the lesion was characteristic of syphilis and all doubt was removed as to the specific character of the chancre in the case of the first chimpanzee. Scrapings of the chancre of the second chimpanzee were inoculated into an ape, *Macacus Sinicus*, but no lesion resulted.

Lassar has reported the successful inoculation of two chimpanzees with syphilis. In the first animal a chancre developed and was followed by secondary lesions which clinically and histologically were specific. A second chimpanzee was inoculated from the first with the production of a chancre and typical secondary lesions.

From these experiments the following conclusions have been drawn by Metschnikoff and Roux :

(1) The chimpanzee (*Troglodytes Niger et Calvus*) is more susceptible to the syphilitic virus than the apes (*Species Macacus*).

(2) A chancre durum of one month's duration is still capable of transmitting syphilis to a chimpanzee.

(3) In the case of the first chimpanzee, the second inoculation five days after the first, with actively virulent material, failed to produce any lesion, therefore an immunity must have developed in five days.

(4) Syphilis is transmissible from one chimpanzee to another of the same species.

(5) The papulo-squamous syphilide is virulent.

(6) The failure to inoculate an ape with syphilitic material from a chimpanzee favors an attenuation of the virus.

In their second paper Metschnikoff and Roux report the inoculation of twelve apes of various species with successful results is only four. From one of these four (*Macacus Sinicus*) material from one of the lesions was inoculated into a female chimpanzee (*Troglodytes Calvus*). Small scaly erosions developed after fifteen days which healed in ten days, attended with no induration. Thirty days after this inoculation had been made no secondaries developed, so material from a chancre durum (human) was inoculated into the same chimpanzee. After eight days the inguinal, cervical and axillary lymphatic glands were found to be enlarged. The chancre and no secondary lesions had developed after sixty-three days. It is possible then to attenuate syphilitic virus by passing it through apes—*Species Macacus*.

A series of experiments was carried out by Neisser and Veiel upon swine and apes, aimed to diminish the natural immunity to syphilis, thus making them susceptible to the virus. The basis of their experiments was the work done by Wassermann in diminishing the resistance of animals to infection. Natural immunity depends upon the bacteriocidal properties of the blood serum through its bacterio-lysins. The lysins are composed of two elements, the complement and the amboceptor, and neither one alone is capable of maintaining the immunity. Wassermann removed the complement by uniting it to a specific antibody, forming an anti-complement. Rabbits treated with serum from guinea pigs developed anti-bodies, which, when injected back into guinea pigs, formed anti-complements and so destroyed their immunity to the typhoid bacillus. Neisser and Veiel in their experiments used one swine and one ape from whose serum the complement had been removed by the injection of anti-bodies developed in the sheep and dog respectively. The inoculation of syphilitic material into these animals produced no lesion whatever.

The most recent experiments have been reported by Neisser and from his results of those of Metschnikoff and Roux, Lassar concludes that many of the earlier experiments reported as unsuccessful have now a greater significance. He also questions the propriety of using the term "typical" in describing specific primary lesions because it is well known that their appearance varies within wide limits.

EXPERIMENTAL INOCULATION OF APES:

(1.) *Species Macacus Rhesus*.—Material inoculated cutaneously and subcutaneously failed to produce any specific lesions.

(2) *Species Macacus Speciosus*.—Four animals inoculated. After an incubation period of thirty-nine days erythematous infiltrated swollen papules developed at the points of inoculation. A chimpanzee was inoculated with one of these papules but the time of observation has been too short to draw any definite conclusions from this experiment. In a similar experiment (*vide supra*) Metschnikoff and Roux concluded that the virus was attenuated by passage through the ape and produced an immunity in a chimpanzee. Neisser questions the attenuation of the virus in his experiment and suggests the possibility that the appearance of the lesions may be modified by the species of animal used. As to the immunity said to have been produced in the chimpanzee,

Neisser calls attention to the fact that only a small proportion of the inoculations into chimpanzees produce chancres.

(3.) *Species Hylobates*.—Inoculated with a chancre durum. After thirty-nine days indurative œdema at the site of inoculation. Lymphatic hyperplasia on the fifth day. Papulo-squamous eczema on the one hundred and nineteenth day. Three months later hyperkeratotic papules developed on the extensor surface of the phalangeal joints. The long incubation period, the indurated lesions at the site of inoculation and the lymphatic hyperplasia argue for the syphilitic nature of the lesions.

EXPERIMENTS UPON CHIMPANZEES:

(1.) A young chimpanzee was inoculated at intervals with human blood serum from a patient in the secondary stage of syphilis, receiving in all 422 cubic centimetres. At the end of eight months no symptoms of syphilis were found. The same animal was then inoculated with material from a mucous patch, followed in thirteen days by erythema and infiltration at the point of inoculation and hyperplasia of the lymphatic gland. On the twenty-sixth day a sharply defined area, indurated and infiltrated, developed on the abdominal wall; in the forty-ninth day a general lymphatic hyperplasia, which healed in ten days, leaving pigmentation.

Conclusion.—(a) Human blood serum from a patient with active syphilis failed to produce syphilis when injected into a chimpanzee.

(b) The serum injection failed to produce a passive immunity, therefore Colles' Law depends upon an infection (mother is syphilitic).

The failure to produce infection by means of the blood serum supports the conclusion of Neisser made from similar experiments upon human beings.

The failure of the blood serum to protect may be due to too weak or too few anti-bodies.

It is possible that mercury may be a specific bacteriocidal substance for the parasite of syphilis and from the dead parasite immune substances may be set free. This is suggested by experiments of Ehrlich and Shiga upon the pigment therapy in trypanosome infection.

Cases treated with trypan red, after recovery retained an immunity lasting thirty days. This is attributed to immune bodies set free from the dead parasites.

(2.) A chimpanzee inoculated cutaneously and subcutaneously with material from a chancre durum developed lymphatic enlargement. A second inoculation was made on the forty-fourth day. No secondaries developed during a period of 119 days.

EXPERIMENTS UPON ORANG-OUTANGS:

Four animals were inoculated, three with syphilitic tissue and one with blood serum. In the first group one animal developed an induration at the site of inoculation and lymphatic hyperplasia. No secondary eruption. The diagnosis of probable syphilis was made. The fourth animal was inoculated with 128 cubic centimetres of blood serum, but failed to develop syphilis.

Should the orang-outang and the ape, species *Hylobates*, be proven susceptible to syphilis by later experiments it would be of great practical importance, since these varieties are most easily procured.

From these experiments it has been shown that the chimpanzee is susceptible to the syphilitic virus and a speedy solution of some of the problems so far unsolved can be expected. Among these Neisser has suggested the following:

(a) The development of the primary and general manifestations in the various methods of inoculation, *e. g.*, cutaneous, subcutaneous and intravenous.

(b) Do certain organs act as foci for the development of the parasites? and if so could not a differential diagnosis be made between the latent and healed syphilis?

(c) The investigation of the generative organs and their part in hereditary syphilis.

(d) Does the variation in virulence depend upon the quantity or quality of the virus? Do the secondary and tertiary lesions depend upon the mercury or upon the variation in virulence?

HARRY W. CAREY.

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A regular meeting of the Medical Society of the County of Albany was held in Alumni Hall on Tuesday evening, December 13, 1904. The meeting was called to order by the President at 8:45 p. m. There were present Drs. Ball, Bedell, Blair, Boyd, Branan, Cochrane, Cook, Craig, Curtis, Gutmann, Hun, Lempe, Lipes, Lomax, Macdonald, McKenna, Moore, C. H., Moston, Pearce, Rooney, Shaw, Stevenson, Traver, Vander Veer, A., Vander Veer, J. N., Winne, L. B.

Dr. SHAW moved that the legislative committee be directed to use every endeavor to defeat the Optometry bill to be introduced during the coming session of the Legislature. Seconded. Carried. There being no further business before the Society the program for the evening was begun.

Dr. H. L. K. SHAW read a paper entitled "Erythema Infectiosum; A New Exanthem."

Dr. CURTIS then rose to discuss the paper of Dr. Shaw, saying in part as follows: That he was particularly interested in this paper because of its bearing upon a class of work with which he was familiar. In his experience the erythemas seemed to be due to a multiformity of causes, chiefly toxic states arising from disorders of the intestinal tract. It was well to remember that while in measles and scarlet fever we had well defined types of eruption the erythemas varied greatly even in successive attacks in the same child. He could not remember ever to have read a description of any skin lesion occurring as the cases narrated by Dr. Shaw. Crocker, however, in 1901, reported an epidemic of exfoliative dermatitis occurring in the London Hospital, which was quite infectious but which has not been described since and indeed seems to have passed away. He was in the custom of telling his classes that the erythemata were most frequent in the neurotic, and he believed that the toxin which directly caused the skin-lesion, intestinal and medicinal toxins especially, acted through the vasomotor system. He distinctly remembered one case which he saw with the President of this Society, in which the child, who had a heat erythema, had at the same time a marked adenopathy. One distinguishing factor in distinguishing the disease described by Dr. Shaw from r  theln is the fact that the former occurs in children only.

Dr. SHAW in closing the discussion said that he had at first been rather sceptical concerning the existence of the disease. The paper was not a citation of his own authority, but was the expression of the experience of a man like Escherich, who recognised this erythema as a distinct type of infectious disease and entirely unrelated to r  theln.

Dr. H. JUDSON LIPES then gave a stereopticon demonstration entitled: "Malignant Disease of the Uterus with Especial Reference to its Differential Diagnosis."

JAMES F. ROONEY, *Secretary.*

JAMES P. BOYD, *President.*

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—STATISTICS FOR NOVEMBER, 1904. *Classified as follows:* Dispensary patients receiving home treatment, 2; district cases reported by health physicians, 13; charity cases reported by other physicians, 29; patients of limited means, 26; old cases still under treatment, 27; total number of patients under nursing care, 95. *Classification of diseases (new cases):* medical, 22; surgical, 4; gynaecological, 4; obstetrical, 17 mothers and 17 infants under professional care; dental, 3; eye and ear, 1; contagious diseases, 4 in medical list; transferred to hospitals, 3; deaths, 2.

Special Obstetrical Department: Number of obstetricians in charge of cases, 2; number of attending obstetricians in charge of cases, 1; number of students in attendance, 5; number of Guild nurses, 4; number of patients, 3. Visits by head obstetrician, 2; visits by attending obstetrician, 1; visits by students, 19; visits by Guild nurses, 28.

ST. PETER'S HOSPITAL.—The surgical staff of St. Peter's Hospital has undergone a change during the last few weeks, owing to the resignation of Dr. Charles Davis and Dr. John Hennessy, attending surgeons. The vacancies thus caused have been filled by the appointment of Dr. Arthur Elting, attending surgeon, and Dr. Gerald Griffin, assistant attending surgeon. Dr. Griffin has also been appointed dispensary surgeon, vice Dr. Heffernan, resigned.

The work of remodeling the old building to make it conform with the new is rapidly approaching completion, and it will be occupied in a few weeks.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission announces general examinations to be held January 21, 1905, including the following positions:

Bank examiner; law examiner (board of statutory consolidation); physicians; military instructor; physical instructor; trained nurses and women officers in state hospitals and institutions; chief engineer, Erie County service; jail keeper and prison guard, New York County service; pupil nurse, Erie County hospital; health officer, village of Rye, Westchester County; and janitor, Oneonta Normal School.

Applications for these examinations must be made on or before January 16th. Full particulars of the examination and blank applications may be obtained by addressing the Chief Examiner of the Commission at Albany.

FOURTH ANNUAL CONFERENCE OF SANITARY OFFICERS.—The fourth annual conference of sanitary officers of this State convened in the Assembly chamber of the Capitol at Albany, December 15th, under the direction of the State Department of Health. The purpose of this gathering was to secure a uniform system of sanitation throughout the State and to increase efficiency of local boards of health. The annual conference makes it possible to meet a large body of health officials who can exchange experience

and discuss all questions affecting practical work while also men competent to instruct can find a large audience for presenting important and practical information. In this way a uniformity of sanitary methods can be assured throughout the State. Many noted authorities on subjects essential to the public health were present and addressed the conference.

U. S. CIVIL SERVICE EXAMINATIONS.—The United States Civil Service Commission announces examinations on January 18th, 1905, to be held at places mentioned below, to secure eligibles for the following named positions under the Isthmian Canal Commission on the Isthmus of Panama: Surgeon, physician, pharmacist, hospital interne, and trained nurse. These examinations are open to all citizens of the United States who comply with the requirements. Applicants should apply at once to the Civil Service Commission at Washington or to the secretary of the Board of Examiners at the places mentioned below, either of whom will furnish full information. The places of examination in New York State are Albany, Brooklyn, Buffalo, Ithaca, Plattsburgh, Rochester, Syracuse, and Utica.

NEW HOSPITAL AT NEW ORLEANS.—One of the leading citizens of New Orleans has announced his intention to give \$250,000 toward the erection of a hospital which shall stand as a monument to the Italian colony in New Orleans. The plans for the hospital are being drawn, and it is estimated that the institution will cost \$1,000,000.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The preliminary announcement of the 32nd annual meeting to be held at Havana, Cuba, January 9th to 13th inclusive, has just been issued. The final announcement will be sent out very shortly, and will give full information concerning rates, hotels, places of meeting, etc. Seventeen topics relating to care of the public health, in addition to a section on bacteriology and chemistry, have already been arranged for.

INTERNATIONAL MEDICAL CONGRESS.—Dr. J. H. Musser, president of the American Medical Association, at the request of the secretary of the International Medical Congress, which meets in Lisbon in 1906, and on approval of the House of Delegates, has appointed the following members of the American Committee of Arrangements:

Drs. Frank Billings, Chicago; Herman M. Biggs, New York; Herbert L. Borell, Massachusetts; William T. Councilman, Boston; William H. Carmalt, Connecticut; Richard C. Cabot, Massachusetts; N. S. Davis, Jr., Illinois; Charles H. Frazier, Philadelphia; R. H. Fitz, Massachusetts; W. E. Fischel, Missouri; Charles Lyman Greene, Minnesota; Ramon Gulterias, New York; H. A. Hare, Pennsylvania; L. Hektoen, Chicago; Edward Jackson, Denver; E. J. Janeway, New York; A. Jacobi, New York; George B. Johnston, Richmond, Va.; W. W. Keen, Philadelphia; Howard A. Kelly, Baltimore; Charles Kollock, South Carolina; L. S. McMurtry, Louisville, Ky.; James H. McBride, California; A. T. McCormack, Bowling Green, Ky.; K. A. Mackenzie, Portland, Ore.; John Herr Musser, Philadelphia; J. B. Murphy, Chicago; R. Matas, New Orleans; William Osler, Baltimore; Charles Powers, Colorado; J. B. Roberts, Pennsylvania; W. L. Rodman, Pennsylvania; M. H. Richardson, Boston; Charles A. L. Reed, Ohio; H.

M. Sherman, San Francisco; Frederick C. Shattuck, Boston; George H. Simmons, Chicago; Charles G. Stockton, New York; George Sternberg, Washington, D. C.; Victor Vaughan, Ann Arbor; John A. Witherspoon, Tennessee; J. Collins Warren, Massachusetts; J. C. Webster, Chicago; William H. Welch, Baltimore; John A. Wyeth, New York.

The Surgeon Generals of the Army, Navy and United States Public Health and Marine-Hospital Service.

The presidents of the American Ophthalmological, Otolological, Gynecological, Physiological and Pediatric societies.

The presidents of the American Dermatological, Laryngological, Surgical, Climatological, Neurological, Medico-Psychological and Orthopedic associations.

The presidents of the Association of American Anatomists Association of American Physicians, American Association of Genito-Urinary Surgeons, American Association of Pathologists and Bacteriologists, New York Academy of Medicine, College of Physicians, Philadelphia, Cook County Medical Society, Chicago, and the Society of Medical Improvement, Boston.

CONGRESS OF CLIMATOTHERAPY.—A congress of climatotherapy and urban hygiene is to be held at Arcachon, France, April 24th to 29th, 1905, under the presidency of Professor Renaud of Lyons. Among the vice-presidents are Dr. Calmatte, of Lille; Prof. Grasset, of Montpellier; and Prof. Pictres, of Bordeaux. The general secretary is Dr. Lalesque of Arcachon.

"CHARAS" POISONING.—Dr. K. J. Oholakia, of Delhi, India, reports several cases of poisoning by charas, a resin of *Cannabis Indica*. He was called upon at mid-day to examine eight Hindoo prisoners at the jail who had suddenly fallen ill. They confessed that they had somehow managed to secure this drug which they smoked in pipes. They vomited, complained of headache, nausea, giddiness and faintness of vision and dryness in the mouth and throat. The conjunctiva was suffused and the pupils of all were extremely contracted. The pulse was full and bounding and 120 per minute. One symptom was peculiar and noteworthy. While in a sitting posture the patient was constantly turning round and round from the left to right in a circular fashion. Ordinary remedies were resorted to and the patients were all right in the morning. The peculiar delirium with contracted pupils and the tendency to turn round and round were sufficiently unique to make worthy this publication.

CHOLERA IN RUSSIA.—For ages Russia has relied upon fetishisms of various kinds to preserve her from epidemics, but at last her leading officials have come to recognize the necessity of applying modern science to the problem, and they are succeeding well. In each city officials have been designated from the medical and engineering professions who, with the assistance of the police, visit every nook and corner of the city and compel even the most dirty of the population to keep their premises clean. Hospitals and laboratories have been established and in Finland, where the cholera raged worst, extraordinary efforts were put forth. Notices of what to be

done to prevent cholera as well as for its treatment, were posted everywhere in six languages. Disinfectants were accessible everywhere. The seats and hangings of the railway cars were covered with leather cloth frequently washed with disinfectants; and to main trains a hospital car was attached, while a temporary hospital, well equipped, was established at each main station. In this manner, although the mortality rate was very high, it was reduced by a very great percentage.

ANTI-MOSQUITO CAMPAIGN IN ENGLAND, AND HER COLONIES.—This work has been carried on with a great deal of success wherever the mosquito and malarial infected districts have demanded attention. The once deadly Colony of Lagos, thanks to the zeal of Sir W. MacGregor, the governor, who is a doctor, has lost its terror of malaria. Perhaps the most striking and rapid results have been attained at Ismailia on the Suez Canal. In a little over six months one class of mosquitoes was practically banished from the town, and coincidentally the amount of malarial fever diminished. In the first six months of the present year there were only three cases in the hospital, against fifty-two for the same period of last year.

MOSQUITOES AND MALARIA IN THE FAR EAST.—At the close of the last Session of the American Medical Association, Dr. Myashima, who represented the imperial Japanese Institute for infectious diseases at Tokio presented drawings and specimens and read an important contribution to our knowledge of malaria. The only type of malaria encountered in Japan is the tertian form; there is also but one species of mosquitoes to be found there. In Formosa several of the types of malaria are seen, among the estivo-autumnal form, and cases of this disease are constantly being imported into Japan from Formosa, yet no cases are seen except in patients who have contracted the disease in Formosa. The conclusion is that the species of mosquito which occurs in Japan is able to transmit the parasite of tertian fever, but not the form which causes the malignant type. In other words, a given species of mosquito may be able to harbor the plasmodium of only one form of malaria, and be immune to the other forms of plasmodium.

PHOTOGRAPHING THE EYE.—Hitherto all attempts to photograph the interior of the background of the eye have remained fruitless because of the fact that it is very difficult to light up the interior to such an extent as to permit one to take a photograph of it. This however has been successfully accomplished by Dr. W. Thorner of the Royal Charity Hospital, London, and will undoubtedly be of vast value to ophthalmologists.

RADIO-ACTIVE WOOL.—One of the latest methods for the distribution of radium bearing pharmaceutical products is cotton-wool which has been submitted to the action of radium rays. From a few milligrams of radium a large quantity of wool may be prepared which is immediately packed in hermetically sealed jars. This loses its radio-activity very slowly and can be transported to considerable distance before being used. It is convenient for easy distribution about the body, and may therefore soon become a stock pharmaceutical preparation.

SOLITARY KIDNEY.—Dr. Byron Robinson, of Chicago, in an article in the *Medical Times* of October, 1904, gives a brief but conclusive summary of the condition known as solitary kidney. He claims that the solitary kidney is a malformed organ by fusion, hence there is only one renal mass in the body. As to the frequency of this condition, Henry Morris collected the statistics of autopsies for ten years from the leading London hospitals amounting to 15,998 cases. The findings demonstrated unsymmetrical or extreme atrophy of one kidney, one to 2,650; horse-shoe kidney one to 1,000; solitary kidney one to 16,000. A search of the American and English journals from 1883 to 1893 showed the following: Unsymmetrical kidney, 11; atrophic kidney, ten; horse-shoe kidney, eight; solitary kidney two. The accompanying statistics indicate that the probability of a person possessing a solitary kidney is very rare but amply sufficient to place the physician on guard. Solitary kidneys occupy different positions within the abdomen and pelvis. The hilus is most often on the ventral surface. There are generally two ureters from the one kidney opening into the bladder in a normal manner. The vessels are generally irregular in number, dimensions, origin and distribution.

OSLER TESTIMONIAL.—A meeting to further this movement was held by the Baltimore City Medical Society December 6. Addresses were made by Drs. Edward N. Brush and William H. Welch. Great interest is being manifested in it all over the country. Dr. John H. Musser of Philadelphia has accepted the chairmanship of the national committee, composed of 100 prominent physicians throughout the country. The governor of Maryland is the national treasurer, and Dr. Henry Barton Jacobs, secretary. About \$10,000 has already been subscribed here. Dr. Osler was consulted as to his preference and expressed himself in favor of a building to be erected here for the accommodation of the valuable medical library of the Medical and Chirurgical Faculty of Maryland, so largely the result of his own interest and effort. The city will be divided into districts and a canvass made. Dr. Osler has greatly endeared himself to this community and the movement is by no means limited to his own profession. The bankers, druggists, lawyers, merchants and other professions and trades have appointed committees to take subscriptions among themselves.

PERSONAL.—Dr. GEORGE E. BEILBY (A. M. C. '99), of Rochester, N. Y., is spending the winter at Johns Hopkins Hospital, Baltimore, Md., doing special work in pathology and surgery.

—Dr. FRED C. REED (A. M. C. '02) has opened his offices at 30 Jay Street, Schenectady, N. Y.

IN MEMORIAM

ROBERT MORRIS, M. D.

Dr. Robert Morris, who graduated from the Albany Medical College in the Class of 1846, died at his home in Ogdensburg, N. Y., on November 14, 1904, in the ninety-sixth year of his age. Dr. Morris was born in Scotland in 1809 and came to this country when a lad with his parents

who settled as farmers in the town of Hammond. Most of his professional life was passed in Ogdensburg, but during the Civil War he served as a surgeon in the army and was quite severely injured while stationed at Key West, Fla., by being thrown from his horse.

Dr. Morris was much more than an ordinary man, and had had a most creditable career as a physician and surgeon of Ogdensburg. He was scholarly and retained the vigor of his mental faculties and his interest in current events to the very last. His recollection was clear and reliable. Within the last two month of his life, while confined to his bed and in conversation with an attendant, reference to some classical work was had and Dr. Morris sent for the book in his library and read and translated the original text readily and intelligently, showing a familiarity with the subject and commenting on it with a readiness and correctness that were most remarkable in one so old.

JOHN W. KNIGHT, M. D.

Dr. John W. Knight, of the class of 1855, of the Albany Medical College, died at Farmington, N. H., October 26, 1904. Dr. Knight was born at the family home near Farmington, in 1822, and practiced in Walpole until advanced age. He returned to Farmington after retiring from practice. He was always held in kindly regard, although at the time of his death the acquaintances of his active days had passed away and few remain to recall the events of his life.

LEWIS W. SUTHERLAND, M. D.

Dr. Lewis W. Sutherland died at the Southside hospital, Pittsburg, Pa., November 12, 1904. Though of advanced age he always maintained an interest in his chosen profession, in which he had been exceptionally successful. He was born in Saratoga Springs, N. Y., in 1826, graduated from the Albany Medical college with the class of 1855, and settled in Wayne county, New York. For the last ten years he resided in Pittsburg. He is survived by two sons and a daughter—Armsby M., Frances E. and Edwin P. Sutherland, of Chicago. His remains were taken to Lyons, N. Y., his former home, for burial.

DEWITT CLINTON WADE, M. D.

Dr. DeWitt Clinton Wade, the oldest practitioner of the town of Holly, Michigan, died at the Flint Hospital, on November 4, 1904. Dr. Wade had been sick for about eight weeks with an affection of the brain which developed symptoms of apoplexy.

DeWitt Clinton Wade was born in Chautauqua county, N. Y., November 3, 1830, and had just attained his sixty-sixth year. His parents were the Rev. Isaac M. and Catherine (Sackett) Wade, both natives of New York, the former being a cousin of the late Benjamin Wade. Dr. Wade attended school at Phelps, N. Y., and later at Clinton, Mich., to which place his parents had removed. He commenced reading medicine at the age of seventeen years, and subsequently studied at the University of

Michigan, where he completed the course, but did not receive a diploma on account of his youth. He then attended the Albany Medical College, from which institution he received the degree of doctor of medicine in 1860. Many years after, it being but a little over a year ago, he received the degree from the University of Michigan.

Dr. Wade began the practice of his profession in Holly in February, 1861, and during all this time has enjoyed the confidence, and, to a very large extent, the patronage of the people of this place and the surrounding country. He was a member of the Oakland County Medical Society, the Saginaw Valley Medical Club, an honorary member of the Washtenaw County Medical Society, and at one time was chairman of the Section of Practice of Medicine of the Michigan State Medical Society. He was also a member of the American Medical Association, whose sessions he generally attended, going last summer to Atlantic City, N. J., and of the Ninth International Medical Congress. From 1868 to 1882 he held the position of United States examining surgeon.

Dr. Wade stood high in the estimation of the profession as a surgeon, and was often called away to take charge of difficult cases or as counsel with other physicians, his practice extending over the entire State. He contributed many valuable articles to medical journals and enjoyed a wide reputation as a writer on medical topics, as well as a physician. For a number of years he was surgeon for the Detroit, Grand Haven and Milwaukee Railway Company.

Dr. Wade was a public-spirited man and was always interested and generally foremost in any move for the benefit of the village of Holly. He was a prime mover in securing a system of water works for the town, the high school building, and the plant that is now the vinegar factory of the H. J. Heinz Company, the largest of its kind in the world. He also built a brick block, which he owned at the time of his death, and he owned two other brick buildings, one of which is occupied as a hospital. The hospital alluded to was established by the doctor eight years ago, and was conducted very successfully up to the time of his last sickness.

Dr. Wade was married May 16, 1862, to Mary A. Gibson, of Holly, who survives, with one son, Linley G. Wade.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A. M., M. D.,

Philadelphia, U. S. A. With the Collaboration of Wm. Osler, M. D., Baltimore; John H. Musser, M. D., Philadelphia; Jas. Stewart, M. D., Montreal; J. B. Murphy, M. D., Chicago; A. McPhedran, M. D., Toronto; Thos. M. Rotch, M. D., Boston; John G. Clark, M. D., Philadelphia; James J. Walsh, M. D., New York; J. W. Ballantyne, M. D., Edinburgh; John Harold, M. D., London; Edmund Landolt, M. D., Paris; Richard Kretz, M. D., Vienna. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume II. Fourteenth Series, 1904. Philadelphia: J. B. Lippincott Company, 1904.

The July volume of this quarterly keeps up the high standard set by its present editorial staff and contains many original articles on practical and timely subjects. The first 133 pages of the book are devoted to the diseases of warm climates and contain nine articles on this general topic. Dr. Charles F. Mason writes on "The Spread of Diseases by Insects, with Suggestions Regarding Prophylaxis." John McCrae, B. A., M. B., in "Recent Progress in Tropical Medicine" considers trypanosomiasis, plague, yellow fever, malaria, dengue, dysentery, "varioid varicella," "aleppo boil," *feri beri* and leprosy. Dr. S. Kanellis contributes an article on "The Etiology of Bilious Hemoglobinurie Fever" and Dr. William Krauss writes on "Malarial Hemoglobinuria." Dr. Kanellis believes that the disease is due to both quinine and malaria and Dr. Krauss is of practically the same opinion, but holds that quinine is the most frequent cause of hemoglobinuria and gives a rational explanation of this effect of the drug. Dr. Allen J. Smith writes an interesting article on "Uncinariasis" in which he describes the *uncinaria duoderalis* and the *uncinaria americana* and gives the life histories of both, as far as they are known, and the pathology and symptomology of the disease produced by them. There are two articles on abscess of the liver, one by James Cantlie, M. A., M. B., F. R. C. S., D. P. H., who strongly advises the use of the trochar and the canula in operating on deep-seated abscesses and believes that more cases should be diagnosed aside in this stage. James Edwin Thompson, M. B. (Lond.), F. R. C. S. (Eng.), contributes the other paper on the subject and states that the use of Manson's trochar and canula is less severe and less arduous than the cutting operation though he considers the latter method the ideal one.

In the section on treatment there are two papers on the important subject of arterio-sclerosis. Dr. John Benjamin Nichols contributes the "Etiology, Diagnosis and Treatment of Arterio-Sclerosis" and Dr. Walter L. Biewing "The Significance and Treatment of the Gastro-Intestinal form of Arterio-Sclerosis." Dr. Nichols deals with the symptoms where the heart, kidneys and brain are involved and writes of heart-stimulants and vasodilators in a rational manner.

In the sections on medicine and surgery a number of interesting clinical lectures are reported the most noteworthy of which is Dr. George E. Malsbury's lecture on "Osteomclachia" with the presentation of a case and a resume of recent literature on the subject. In Dr. J. Torrance Rugh's lec-

ture on "Ankylosed Joints and their Non-Operative Treatment," he gives specific directions for properly manipulating the various joints and the numerous illustrations greatly aid the reader in understanding the technique.

A. G. C.

Diseases of the Nose, Throat and Ear and their Accessory Cavities. By SETH SCOTT BISHOP, M. D., D. C. L., LL. D., Author of "The Ear and its Diseases"; Honorary President of the Faculty and Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College; Professor in the Chicago Post-graduate Medical School and Hospital; Surgeon to the Post-graduate Hospital and to the Illinois Hospital; Consulting Surgeon to the Mary Thompson Hospital, to the Illinois Masonic Orphans' Home, and to the Silver Cross Hospital of Joliet, etc. Third Edition. Thoroughly Revised, Rearranged, and Enlarged. Illustrated with 94 Colored Lithographs and 230 Additional Illustrations. 564 Pages, Royal Octavo. Price, Extra Cloth, \$4.00, net; Sheep or Half Russia, \$5 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

This book on the diseases of the Nose, Throat and Ear, by the well-known author, is one of the best of the text books on this subject, published during the past year. The colored plates are unusually good, and the literature has been well covered.

The author is one of the chief advocates of the use of bromide of ethyl for general anæsthesia in short throat operations, particularly for the removal of adenoids. He has perhaps used it as extensively as any one for this particular operation, and with uniformly good results. If any objection could be raised to its use, it would be, that it is altogether too transient in its effects, the patient coming out of the anæsthetic sometimes before the operation is completed. The chapters on hay fever and diphtheria are very complete, nearly all the theories to account for the origin of hay fever being considered. No mention is made of Kyle's investigations concerning the altered chemistry of the saliva in hay fever.

The book on the whole is most excellent, and is one that no specialist can afford to be without.

C. F. T.

Diseases of the Stomach and Intestines. With an Account of their Relations to Other Diseases and of the Most Recent Methods Applicable to their Diagnosis and Treatment. By BOARDMAN REED, M. D., Professor of Diseases of the Gastro-intestinal Tract, Hygiene and Climatology in the Department of Medicine of Temple College, Philadelphia. New York: E. B. Treat & Co., p. 1024. Price \$5.

This work, which is given largely in the form of lectures, happily combines in one volume the consideration of the diseases of the stomach and intestines. It follows closely in its arrangement the works of Boas, Riegel and Hemmeter. Part One considers the anatomy of the digestive tract and the physiology of digestion, absorption and defecation; Part Two, the methods of examination, together with a symptomatic guide to diagnosis,

which, though well intentioned, would seem too often to be confusing rather than helpful. Part Three includes the various methods of treatment, and Part Four the diseases of the gastro-intestinal tract.

The author has undoubtedly been wise in combining in one volume the interdependent diseases of the gastro-intestinal tract and in presenting his subject-matter in so lucid a manner. The attempt however to make any text-book for general practitioners on a special subject encyclopedic in character is likely to defeat its very object. The lecture method, although interesting, is apt to be unduly verbose and to permit at times wanderings not closely connected with the subject-matter. When one considers that this is practically the same size as Strümpell's or Osler's text-book of medicine, its over-magnification is evident.

There is also too frequently the reappearance *in extenso* of papers, which have appeared in medical journals, rather than the conclusions which they suggest. In the tests for the quantitative determination of pepsin no mention is made of the methods of Mett or of Hammerschlag. Under blood-examinations value is placed upon the finding of basophilic granulations in the red corpuscles(?) to differentiate lead colic from gastralgia. No mention is made of the internal use of oil for hyperchlorhydria.

There are some poor expressions, as "every two or three nights" for "every second or third night."

The section on diseases of the rectum and anus, contributed by Dr. Collier Martin, is short and thoroughly practical.

The book, in spite of minor defects, is a creditable production and worthy of study by general practitioners.

ANDREW MAC FARLANE.

Strabismus, or Squint, Latent and Fixed. A Supplement to the Errors of Refraction. By FRANCIS VALK, M. D. G. Putnam's Sons, New York, 1904.

The work is an attractively presented summary of the author's personal experience with cases of muscular imbalance. Old theories are discussed and new ones advanced to explain the varied conditions of squint. The etiology is most thoroughly studied, then the treatment, both orthoptical and operative, receives careful consideration. Numerous case histories are used to illustrate the author's method. It is well worth reading.

A. J. BEDELL.

A Text-Book of Diseases of Women. By CHARLES B. PENROSE, M. D., Ph. D., formerly Professor of Gynecology of the University of Pennsylvania. Fifth edition, *thoroughly revised*. Octavo volume of 539 pages, with 221 fine original illustrations. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$3.75 net.

This volume is intended mainly for the medical student and presents in systematic form the chief facts connected with what are usually understood as the "Diseases of Women." It represents the

author's ideas and experience in the teaching of this subject as carried out by him in the University of Pennsylvania.

The volume contains 550 pages and 225 illustrations. The subject-matter is subdivided into 43 chapters, of which the first and second present a discussion of the general causes of the diseases of women, with the methods of examination. Chapters 3 and 4 deal with the diseases of the external genitals and vagina. Chapters 5, 6 and 7 present the anatomy and mechanism of the perineum, with a discussion of injury to the perineum and its results. Chapters 8 to 11 are occupied with a brief description of the normal position of the uterus and the various malpositions to which it is subject.

The important subject of diseases of the cervix, including carcinoma of the cervix, occupies chapters 12 to 16, while the still more important subject of diseases and tumors of the uterus is presented in chapters 17 to 33. Following this are nine chapters devoted to the diseases and tumors of the tubes and ovaries and parovarium. Brief reference is made in succeeding chapters to malformations of the genital organs, disorders of menstruation, the menopause and genital fistulæ. The clinical portion of the work closes with a discussion of disease of the urethra and bladder and gonorrhea in women.

The last five chapters contain an outline of the general technique of gynecological operations, with the special technique of operations upon the uterus and appendages, together with the mode of treatment after abdominal sections and the effects of the removal of the uterine appendages.

The volume lays no claim to originality either in subject-matter or mode of presentation, and does not present many new ideas or facts. To the medical student and the general practitioner the volume will appeal especially, as it is of far more practical value than most of the more voluminous works upon gynecology. The general surgeon or the gynecologist will, however, find in it comparatively little to occupy his attention.

A. W. E.

The Surgery of the Heart and Lungs. A History and Résumé of Surgical Conditions Found Therein, and Experimental and Clinical Research in Man and Lower Animals, with Reference to Pneumonotomy, Pneumonectomy and Bronchotomy, and Cardiectomy and Cardiorrhaphy. BY BENJAMIN MERRILL RICKETTS, Ph. B., M. D. Member Am. Med. Assn., Western Surg. and Gyn. Assn.; Int. Medical Congress, 1887, etc. The Grafton Press, New York. MCMIV.

In a somewhat lengthy preface to this work the author attempts to present an excuse for the publication of a volume upon the surgery of the lung. No attempt is, however, made to excuse the presentation of that portion of the work devoted to the surgery of the heart for which we believe some sort of an apology should be made.

The volume comprises 498 pages of which 271 are occupied with the surgery of the heart and the remaining pages with the surgery of the lung.

Of the 271 pages upon heart surgery 141, or more than half, are occupied

with references to the literature and there are just 130 pages of subject matter. The chapter on "Cardiomorphia" contains nine pages of subject matter to which are appended twenty-eight pages of reference to the literature. The only claim to originality in the work upon the heart comprises a series of experimental operations upon dogs in some of which incisions were made into the pericardium and sewed up again while in others they were left open. In other cases incisions were made into the heart muscle and sewed up and in still others, portions of the coronary arteries were ligated. Sometimes the dogs died and sometimes they recovered. While the experiments may have been new and novel to the author they can scarcely be held to be original in any sense of the word and if they were, they would prove nothing and add nothing new to our knowledge of the surgery of the heart.

The surgery of the lung is treated in much the same fashion as is that of the heart, beginning with the anatomy and physiology, introducing all the known terms used in connection with diseases of the lungs and ending with another series of animal experiments. There is less literature appended to this part of the volume but to fill up space a chapter is introduced upon the history of sutures. What relationship, however, this has to the subject under consideration the reader is left to conjecture.

Scattered through the volume are 87 so-called illustrations, most of them photographs and photomicrographs, practically none of which show anything of interest and merely fill up space and sadly overtax the imagination of the reader. As a practical demonstration of padding, the volume is a great success, but as an intelligent presentation of the surgery of the heart and lungs a colossal failure.

A. W. E.

A Text-Book on Materia Medica: Including Laboratory Exercises in the Histologic and Chemic Examinations of Drugs. For Pharmaceutic and Medical Schools, and for Home Study. BY ROBERT A. HATCHER, Ph. G., M. D., Instructor in Pharmacology in Cornell University Medical School of New York City; and TORALD SOLLMANN, M. D., Assistant Professor in Pharmacology and Materia Medica in the Medical Department of the Western Reserve University of Cleveland. 12mo volume of about 400 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1904. Flexible leather, \$2.00 net.

The length of this review is entirely out of proportion to the size of this book (which contains only 280 pages of 12mo reading matter), but it is in no way disproportionate to its excellence. For years, *Materia Medica*, which was borne in the dark ages, begotten by ignorance out of superstition, has been the *bete noir* of all medical students, but if the methods suggested in this book are followed out, supplemented by appropriate didactic lectures, this long neglected branch of medicine will be lifted to the rank to which it belongs.

In the preface the authors state that the book was "written with the object of popularizing the 'Laboratory Method' in the study of Organic *Materia Medica*." They call attention to the proverbial dry-

ness of this subject, which they assert can be traced directly to the neglect of objective study, and to even the casual observer this statement is amply proven in the pages which follow.

Part I is entitled *Systematic Study of Crude Drugs*. The first chapter treats of roots and after giving a clear and concise definition of what a root is, suggests that of each root the student should set down in his notebook, after actual inspection, a description of the specimen as it appears to him: the size, shape, branching and color, both external and internal; texture as shown by density and fracture, the latter varying from brittle and sharp to fibrous and elastic; taste; odor; thickness of the bark; whether the central cylinder is woody or composed of soft tissue. Then follows a description of each of the official roots, in which is considered: their chief constituents; therapeutic use; average dose; symptoms of poisoning and first aid. It is advised that this description be not referred to until the student has first described the drug himself.

Chapter II follows the same plan with Tubers, Corms, Bulbs and Rhizomes and Chapter III with Wood and Barks. Chapter IV deals with Leaves, Herbs and Flowers, and of the leaves the student should state after examination: whether they are simple or compound; petiole or sessile; give shape (outline) and size; their margins (entire, toothed or lobed); texture (thin and fragile or tough and leathery); surface (smooth or hairy); shape of apex and base; venation; color; dotted or not; odor and taste. Of herbs a similar examination is made, as is also the case with flowers. Chapter V has to do with Seeds and Fruits, which also are treated in detail. Chapter VI is entitled *Drugs other than Plant Organs*, and includes, among others, ergot, nut-gall, opium, aloes, sugar, honey, gums and gum-resins, resins, balsams, oleo-resins, camphors, volatile oils, fixed oils, fats and waxes, animal excretions and secretions, and antitoxins. In addition to the official drugs of each class, lists are given of the unofficial drugs of medicinal value.

Part II, *Plant Histology*, gives instruction in the use of the microscope and tells what constituents should be looked for and how to find them, the titles of the different chapters being: Cells and Cell Contents; Special Morphology of Cells; Tissues and Organs; Histology of Some Important Drugs (such as belladonna root, rhubarb, cinchona and nux vomica); Histologic Study of Powdered Drugs.

Part III comprises *Chemical Exercises in Materia Medica*, giving a list of apparatus and reagents needed, together with chapters on the method of examining for and determining of the most important constituents in drugs, together with many tests for impurities. A Posological Table of twelve pages and a Glossary of two pages end the book.

The only adverse criticism to be offered is that the publishers have put on a flexible binding, which curls up almost immediately and whose only useful purpose can be to remind one of his "Oxford Bible."

SPENCER L. DAWES.

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Recent Accessions to the Library

AMERICAN MEDICAL ASSOCIATION—Relation of the cervical sympathetic to the eye; papers read before the section of ophthalmology of the American Medical Association at the annual session, New Orleans, May, 1903. Chicago, 1904. Papers by G. E. de Schweinitz, W. H. Wilder, J. M. Ball and J. E. Weeks.

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Contributions to medical research, dedicated to Victor Clarence Vaughan by colleagues and former students of the department of medicine and surgery of the University of Michigan, on the twenty-fifth anniversary of his doctorate. Ann Arbor, Michigan, 1903.

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PERIODICALS

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Medical World. Philadelphia.

Our hospital messenger, devoted to the interests of the children's homeopathic hospital of Philadelphia. Philadelphia.

MEDICINE

Edited by Samuel B. Ward, M. D., and Hermon C. Gordinier, M. D.

The Contagiousness of Icterus. (La Contagiosité de l'Ictère.)

S. COSTA. *Revue de Médecine*, Vol. XXIV, No. 2, February, 1904.

The author studies in detail an epidemic of icterus which occurred in a battalion of French troops engaged in summer maneuvers, and attempts to show that its spread was due to some infectious agent acting by direct contagion from man to man, and not to some factor such as climate, locality or diet which would exert its influence upon all the members of the expedition simultaneously.

The essential points in this epidemic were as follows:

A number of cases of icterus developed in the early summer in a company of seasoned and previously healthy soldiers stationed in a mountainous country where there was an abundant supply of good water. The company was then ordered elsewhere, and in turn joined other troops in different localities. Though these troops had heretofore been free from icterus, cases were found to develop in each instance shortly after their union with the company in which the epidemic had started and in which it still continued. Members of other companies sent to the locality where the epidemic originally began also contracted the malady. The general epidemic continued after the various units of the battalion were united in winter quarters in October, and did not entirely cease till January, when the last cases developed among some recruits who had recently joined the older troops, and who had, therefore, not been subject to any influences exerted during the campaign. In all about eighty cases of the disease came under observation among probably about five hundred men, and the author states that there were many other cases which did not seek hospital treatment. The spread of the epidemic was gradual; the first case occurred in July, and the last in January. The cases were all mild and presented the usual features of catarrhal jaundice.

Costa discusses the theories offered by different authorities as to the etiology of icterus and in explanation of the development and spread of epidemics of this disease; he attempts to show by a careful analysis of the facts that none of these theories are applicable to the epidemic he studied unless one also takes into account the factor of direct contagion from man to man. The epidemics of icterus in the literature are also studied from this standpoint, and the author points out that in certain features these epidemics exactly resemble epidemics of other diseases, such as mumps, measles and scarlet fever, which are generally acknowledged to be directly contagious.

No conclusions are reached as to the nature of the infectious agent, to the point of its entrance to the system nor to the manner of its action. Costa's study is upon the more general lines of the infectiousness and contagiousness of icterus rather than upon the narrower ones of the exact etiology.

The Adams-Stokes Symptom-Complex.

CLARENCE QUINAN. *The American Journal of the Medical Sciences*, September, 1904, p. 403.

In 1893 Huchard proposed the name "Adams-Stokes Disease" for a remarkable symptom-complex characterized by temporary or permanent bradycardia, loss of consciousness, together with apoplectic or epileptiform seizures. According to him the condition is usually if not exclusively encountered in individuals of advanced years, and is indicative of arteriosclerosis of the cardio-bulbar type.

The post-mortem findings are inconsistent. Arterial degeneration may be widespread, but it is more common to find regional sclerosis. Luce noted diffuse parenchymatous vagus neuritis with total disappearance of the axones at many points. Sclerotic changes in the coronary vessels are frequent, though by no means invariably present, partial occlusion of one or both vessels may occur as the result of calcareous deposits at their points of origin. In Sendler's case the vessel was partially occluded by the pressure of a primary fibroma of the heart. Fatty or fibrous myocarditis is often present, valvular defect may or may not be present. In a case reported by Luce there was a primary round-celled sarcoma of the heart of the size of a hazelnut situated in the right ventricle, which invaded both the aortic and pulmonic orifices, giving rise to true bilateral obturating stenosis. In Holberton's case there was found narrowing of the occipital foramina, together with changes in the vagi and superior cervical ganglion. In Sepino's case there was compression of the pons and medulla. The arteries at the base of the brain sometimes present degenerative changes. Bradycardia, permanent or recurring, is always present, accompanied at irregular intervals by central nervous manifestations that are characteristic.

The seizure may be preceded by a definite aura, sensations of weight in the epigastrium or a sudden rush of blood to the head. In the fully developed attack there is sudden loss of consciousness, usually momentary although it may last from several seconds to hours. The patient falls, convulsive movements occur, the pupils are dilated, respirations stertorous or

of the Cheyne-Stokes type. The pulse rate is always diminished and counts of twenty and under are not uncommon. In one case a rate of five was noted. Several attacks may occur each day and then disappear for weeks or more.

His's patient had forty-three attacks in a single day. Vaso-motor unrest is seldom lacking; extreme pallor of the face, alternate blenching or reddening, cold extremities, and drenching sweats after the attacks are the most common signs. Positive centrifugal pulsation of the jugular vein exceeding in frequency the apex beat was observed by His. His patient had a radial pulse rate of eighteen to thirty-two, exactly isochronous with the apex beat, while the jugular pulse ranged from ninety-six to one hundred four and was isochronous with a low humming murmur heard to the right and left of the sternum in the second and third interspaces. His believes this to be due to a blocked heart with the lesion at the auriculo-ventricular rings causing independent auricular contractions, with no accompanying movements of the ventricles.

The author's case, a male aged seventy-two, was under observation over two years. His attacks were always preceded by a sensation of a rush of blood to the head. In the attacks the head is held well down between the shoulders, the chin thrust forward, the eyes wide open, with large pupils, and the expression very anxious, a chair or other support is suddenly grasped. Consciousness is lost, the respiration becomes stertorous, and the body is bent forward, the arms and legs partly flexed and very rigid. This tonic condition is succeeded by irregular clonic contractions, the whole attack lasting from five to fifteen seconds. The pulse becomes infrequent, dropping from forty to twenty-six or less, with arrhythmia, and then stops and the heart ceases to beat. The arterial tension both before and especially after the attacks was plus, ranging from one hundred seventy to two hundred fifty millimetres.

A Case Exhibiting the Adams-Stokes Syndrome.

E. H. LASLETT. *The Lancet*, June 4, 1904, Page 1568.

The patient was a thin, spare woman, sixty-nine years of age. Married and mother of nine children. First seen March 4, 1904, lying on the floor semi-conscious, and vomiting small quantities of clear fluid. The pulse was full and very slow. During the same evening she had three fainting attacks. The next morning there was quite a number in rapid succession. In the morning she had a seizure, during which she was unconscious for about a minute, with dilated pupils, grew cyanosed, stertorous breathing, rigidity of the body and clonic irregular movements of the arms. During the unconscious period the pulse was absent from each wrist. In a very few minutes another seizure occurred, very short in duration; the pulse was again absent. After this attack the pulse registered sixty, in the afternoon the pulse was from forty to sixty and irregular. While listening to the heart the beats became rapidly slower and very feeble, and almost immediately the respiration became inaudible and a general convulsive attack occurred, a moment later breathing ceased, the jaw dropped and she appeared dead, but a few seconds later the tongue moved, head turned, she

opened her eyes, sneezed and spoke. At nine p. m. the pulse was between thirty-six and forty, five seizures occurred during the afternoon, heart sounds were of moderate intensity, there was a slight basic systolic murmur, the right heart was dilated, the radials were tortuous and thickened. While examining her, the pulse began to fail and a serious attack followed, for forty-five seconds the pulse was absolutely absent, then a feeble pulse followed by a stronger, when consciousness returned. These attacks continued until the end of the month, when they ceased, apparently under the influence of strychnine and potassium iodide.

OBSTETRICS AND GYNAECOLOGY

Edited by James P. Boyd, M. D., and H. Judson Lipps, M. D.

The Pathology of the Corpus Luteum. (Die Pathologie des Corpus Luteum.)

E. SANTI. *Monatsschrift für Geburtshilfe und Gynäkologie*, July and August, 1904.

The study of the pathology of the corpus luteum began with the work of Rokitansky in 1859, but little has been done since that time. The author has given the result of his observations made upon serial sections of ovaries from about sixty cases. Most of the material was obtained from operations, the remainder being secured at autopsy. Simple hypertrophy of the corpus luteum is considered and then the relation of the corpus luteum and osteo malacia. The author then discusses other changes under the following headings: Calcification of the corpus luteum, dendritic proliferation, cystic degeneration and true cysts of the corpus luteum, changes in the corpus luteum due to secondary hemorrhages, reduplication changes in the lutein layer as a result of secondary hemorrhages, haematoma, abscesses, tuberculosis, benign and malignant tumors of the corpus luteum.

(1.) Apart from pregnancy a considerable degree of hypertrophy can occur in corpora lutea as a result of inflammatory stimulation of the ovaries; more particularly he has described this in connection with fibromyomata.

(2.) If one distinguishes small cystic degeneration of the ovarian follicles from true follicle cysts, one can also distinguish a cystic degeneration of the corpus luteum from true corpus luteum cysts, the two conditions having corresponding ætiological factors.

(3.) According to the arrangement of the various layers one can distinguish four types of corpus luteum cysts, which have different ætiological factors. These four types do not appear to us to be very exactly differentiated, but they are described as follows:

(a) Cysts whose innermost lining consists of the lutein connective tissue.

(b) Cysts whose innermost lining consists of a connective tissue layer which covers over the lutein layer.

(c) Cysts whose innermost lining consists of cells which cannot be distinguished certainly as epithelial or endothelial, covered by a lutein and a fibrous layer.

(d) Cysts whose innermost lining is epithelial in nature and which comes directly into contact with the lutein layer.

(4.) The lutein layer of these cystic formations undergoes the same de-

generation phases as in the normal corpus luteum (fibrous and hyaline degeneration), and the various relations can exhibit very different appearances in the various parts of these cysts.

(5) Secondary hæmorrhages can occur in the tissues of corpora lutea, which can change them in various degrees. Such hæmorrhages rarely attain a greater size than a cherry and larger ones than these are usually hæmorrhages into pre-existing corpus luteum cysts.

(6.) Abscesses of corpora lutea may be found, generally of small dimensions only, but larger ones have been described, and these are only corpus luteum cysts which have become infected with pyogenic organisms.

(7.) Benign and malignant tumors of the corpus luteum are found. The first are fibromata, which most probably arise as a connective tissue wall of corpus luteum hæmatomata. The latter, considering the connective tissue nature of corpora lutea, are sarcomata.

(8.) All the above-mentioned changes can occur alike in the corpus luteum of pregnancy or the corpus luteum of menstruation.

(9.) One cannot definitely state yet whether there is any relation between anatomical changes and disordered function of the corpus luteum.

The Hematom-Mole: Its Clinical and Pathological Characteristics and Relation to Early Hydromnios.

TAUSSIG. *American Journal of Obstetrics*, October, 1904.

While of infrequent occurrence, hematoma-moles are not nearly so rare as the literature would lead one to suppose. They were recognized even in the seventeenth and eighteenth centuries, but no approximately accurate description appeared until the monograph by Pernice in 1852. Breus investigated the subject more minutely in 1892. Thus far only forty-two cases have been reported, according to Taussig, who describes eight of them.

Hematoma-moles are found most frequently in multiparæ from twenty-five to thirty-five years of age, following a large number of pregnancies. Often there is a tendency to miscarriage. Endometritis may be a precursor to their formation. Patients usually present a history of missed abortion. After several months in which pregnancy progresses as usual, they begin to notice that their abdomen is no longer increasing in size as it should. No fetal movements at fifth month. Slight bleeding for a day or two may occur at irregular intervals, but after the sixth or even the twelfth month after conception, a more persistent bleeding sets in, accompanied by bearing-down pains. Uterus will be enlarged to size of child's head, softer than normal, yet distinctly harder than that of third month pregnancy.

Positive diagnosis is very difficult and condition must be differentiated from delayed abortion, hydatid mole and myomatous uterus. Prognosis is favorable, both as to the immediate outcome and the future. No such malignant sequellæ as after the hydatid moles have been noted. The mole is loosely attached to the uterine wall as a rule.

An amniotic cavity out of all proportion in size to the minute embryo and encroached upon by numerous subchorionic hematoma, varying in shape from broad stemmed to polypoid forms, is the usual pathological feature.

The writer distinguished two classes of these moles, depending, probably,

upon the state of the development of the placenta. In one the hæmatoma are found scattered about the entire surface of the ovum, more or less isolated, and polypoid in shape. In the second class the placental site is already clearly defined and the hematoma are limited to this area, with broad base and closely packed, with the chorio-amnion stretched over them. Usually but a small quantity of a sero-sanguinous amniotic fluid is present. Umbilical cord is usually hydropic. Sometimes the fœtus is not found. When present no anomaly was found to account for death of fœtus. It is to be noted that the stage of embryonal development was more advanced than the size of the embryo would have led one to suspect.

Microscopically the various structures of the mole for the most part are well preserved. Decidual vessels showed no evidence of the disease. Uterine mucosa obtained by curettement usually found to be normal decidua. In most cases these appear in the outer zone of the ovum, an infiltration with leucocythe varying in amount, but such an infiltration is an accompaniment of almost all retained ova. The hæmatoma are situated in the intervillous spaces between decidua and chorion, the blood is in various stages of absorption, is in layers and composed largely of channeled fibrin. The hematoma gives the appearance of having accumulated gradually by successive additions of blood-cells. In the center of these clots necrotic villi are found, but wherever free blood was still to be found they were in excellent preservation and the syncytium in particular showed evidences of active proliferation. Laughan's layer was not always noted. The chorionic connective tissue was distinctly fibrinous and contained a large number of spindle-shaped cells.

Traces of chorionic vessels have been observed. Amnion is not usually preserved. A form of hematoma-mole somewhat similar is occasionally found in tubal gestation.

Taussig's view as to the formation of these moles is as follows: "After the death of the fœtus in the first or second month, of gestation the fetal membranes and the amniotic fluid increase in volume. Thus arises a secondary hydramnios-ovum. This growth continues up to a certain point. The ovum is retained, the amniotic fluid is then gradually absorbed and the ovum as a whole shrinks somewhat in size. By the negative pressure thus produced folds or invaginations of the membranes arise, which become filled with the blood circulating in the intervillous spaces. By continued absorption of the fluid, together with a certain degree of stretching of the membranes by the blood clots, we have the formation of the hematoma. In this process the insertions of the villous stems act as fixed points. If the stems are close together a hemispherical or broad-based hematoma results; if far apart, a tuberos or polypoid hematoma."

A Contribution on the Spontaneous Rupture of the Pregnant Uterus.
(*Beitrag zur spontanen Uterus-Ruptur in der Schwangerschaft.*)

K. MEYER. *Beiträge zur Geburtshülfe und Gynäkologie, Band IV. Heft 1, 1904.*

While many investigators have been somewhat discouraged as to the results of microscopical researches in cases of rupture of the uterus during

pregnancy, Baisch, by deduction, concludes, according to the author, that in all cases where malformations of the uterus or abnormal attachments of the ovum (interstitial forms) do not exist, the rupture is due to a pathological alteration of the musculature of the uterus—*i. e.*, a substitution of the normal muscular fibres by a heterogenetic tissue. Meyer has described such changes in a case which he reports *in extenso*.

The patient was twenty-seven years of age, Para-IV. Family history negative, excepting a sister died of heart failure (embolism) immediately after labor. Patient had rather frail constitution, but had always been well. First and second pregnancies terminated a few weeks before term, but without complication.

In third, she aborted at tenth week, cause unknown. During last pregnancy no special symptom, but general fatigue. Rupture occurred shortly after onset of labor pains, but case was not diagnosed nor operated upon until five days later. Uterus and adnexia were removed by abdominal section. Patient died. Uterus somewhat smaller than puerperal uterus at term. Adnexia were normal. The rupture was situated on the posterior surface, one-half a centimetre from origin of tube. The placenta was attached to fundus and anterior wall, only its border showing through rupture.

At autopsy the following conditions were found: Peritonitis fibrinosa, pleuritis serosa sinistra, anæmia universalis, metorismus intestini et ventriculi.

Microscopically the peritoneum is a thickened homogenous gelatinous mass, with but few nuclei, the margin deeply stained with eosin and without epithelial covering. In other places, especially along border of rupture, a rather thick layer of a fine granular, fibrinous mass lies upon the epithelium, which in some places has become cylindrical. In other places small inflammatory areas are found. The muscularis serosæ is but faintly stained, poor in nuclei, the muscle cells either swollen or in formless masses. The connective tissue of the muscular coat is altered—the fibrillary network is lost and is replaced by a transparent jelly like mass with but few nuclei. Numerous vessels of small and medium calibre show hyaline degeneration, or their walls are completely obliterated by hyaline masses, while others near by are filled with cocci. At point of rupture the muscle fibers are pale, nuclei few, longitudinally cut fibers not showing normal striations. The protoplasm is cloudy, homogenous and swollen, the contour irregularly wavy or broken. In other sections, further away from rupture, a vacuolated condition appears over a considerable area. The cement substance here forms either a network, in the meshes of which the degenerated muscle cell-bodies lie, or forms a tree-like frame, to which they hang like leaves. Here likewise the nuclei are almost entirely absent; in some places the muscle fibers are necrotic.

In the mucosa there are no particular changes from the usual decidual character, the scrotinal giant cells are not found deeper than normal in the musculature, nor are any villi found here. At one point in the neighborhood of the rupture, but not at the placental site, the mucosa is but four millimetres from the peritoneum, so that the muscular layer at this point is greatly thinned out.

Since the uterus was not obtained until five days after rupture, the question arises whether these changes might not have occurred during the interim. In experimental work other investigators have noted some change within a few hours, and vesicular and fatty degeneration in three to five days, but the author thinks that the callous thickening of the serosa, the scarcity of cellular elements and the hyaline obliteration of vessels, point to a longer process, and concludes that this pre-existing degenerative process was at least the cause of the rupture, although we are not enlightened as to the direct cause of the degeneration. But the author thinks that the structure and small size of the uterus, the slight development of the woman, as well as the apparently hereditary weakness of the uterus, which showed itself in the three previous spontaneous premature labors, points to a certain grade of infantilism.

PATHOLOGY AND BACTERIOLOGY

Edited by Richard Mills Pearce, M. D.,

Assisted by E. MacD. Stanton, M. D., and Charles K. Winne, Jr., M. D.

The Histological Changes Produced by the Injection of Adrenalin Chloride.

W. B. DRUMMOND. *The Journal of Physiology*, 1924, *xxxi*, 81.

The author divides the lesions caused by the injection of adrenalin chloride into two groups. The first group comprises those caused by the influence of adrenalin upon the blood pressure and includes congestion of the viscera, especially the liver and the lungs, occasional hæmorrhages, and frequently effusions into the serous cavities. The second group includes those caused by the direct toxic action of the adrenalin, and comprises degenerative changes in the blood vessels, degeneration and desquamation of the cells of the kidney tubules, and central necroses of the liver.

All the changes varied greatly in degree; the most intense followed doses of adrenalin sufficiently large to cause death after a single injection. Such doses frequently caused convulsions before death. Convulsions preceding death were also occasionally seen in some animals which were receiving smaller injections over longer periods of time. The details of the findings are as follows:

In the pancreas, no constant changes were found, and never any special changes in the islands of Langerhans. This is interesting from the point of view of the relationship between glycosuria and lesions of the islands, as the author implies that glycosuria was constantly present in the animals under observation.

The appearance in the kidneys varied somewhat according to the size of the dose and the length of time the injections covered. In the more acute cases the congestion was marked, and the swelling and granulation of the cells was extreme; in the more chronic cases the congestion and the cloudy swelling was less marked, but desquamation of the cells was very frequent. All these lesions were more frequent in the convoluted than in the straight tubules. Except for some

engorgement, glomerular changes were slight. No changes were noted in the adrenals.

In the liver, congestion only was found in the less severe cases. In other, necrosis of the centres of the lobules was frequently seen associated with marked exudation of polymorphonuclear leucocytes, or marked extravasation of red blood corpuscles. In some of the less severe cases marked swelling with granulation or vacuolation of the central cells of the lobules was noted and the author discusses as causes which lead to this appearance, an early stage of the central necrosis, a fatty degeneration in the liver cells, or perhaps the presence of an abundant supply of glycogen. He suggests the possibility of the adrenalin causing an increased accumulation of glycogen in these cells.

In the lungs, the congestion was intense and sometimes apparently hæmorrhagic in character; these appearances were not uniform throughout the lung tissue. The air cells frequently contained red blood cells and fibrin, or in the later stages of the process, polymorphonuclear leucocytes and desquamated epithelial cells. The smaller vessels of the lung frequently showed an appearance of the walls which the author suggests is colloid in character. Rupture of such vessels was noted.

In a discussion of the causes of the above-mentioned lesions, the author suggests that all except the cellular degenerations in the liver and kidney and the changes in the smaller vessels, are due either to a failure of the arterioles from the larger vessels to contract or what is more likely, to an extreme rise of blood pressure in the veins. Especially is this true for the central parts of the liver lobules and the region of the convoluted tubules in the kidney. Death, he points out, is usually caused by asphyxia due to œdema of the lungs, but states that the inflammatory reaction which is present, is, he believes, due to the toxic action of the drug.

As regards the primary cause of the pulmonary congestion the author quotes the experiments of Brodie to show that adrenalin causes a more marked rise in pulmonary than in aortic blood pressure and in the former case it acts for a much longer time than in the latter. Brodie also showed that while adrenalin introduced into the peripheral circulation caused an immediate contraction of the vessels with consequent partial stoppage of the blood flow, when it was introduced into the pulmonary circulation the blood flow was increased; this, he believes, is due to the fact that it acts upon the blood vessels through the vaso-motor system.

These observations are of importance as bearing upon the use of adrenalin in hæmoptysis, which the author of these experiments strongly condemns.

To the toxic action of adrenalin, the author describes the degenerative changes in the renal and hepatic epithelium as well as the changes in the walls of the vessels of the lung. In support of this theory he cites the fact that similar changes have been pointed out by various investigators in many toxic and infectious conditions.

The Experimental Production of Arteriosclerosis by Repeated Injections of Adrenalin. (Atheromatosis Aortæ bei Kaninchen nach intravenösen Adrenalininjectionen.)

v. RZENTKOWSKI, C. *Berliner klinische Wochenschrift*, 1904, XLI, 830.

By the injection of three drops of a 1 to 1000 solution of adrenalin into the ear vein of rabbits every two days for periods varying from six weeks to three months, v. Rzentkowski has produced calcareous changes in the aorta. Histologically the lesions consist of a deposition of lime salts without cell infiltration or distinct evidence of fatty degeneration. In the elastica, mechanical displacement of the fibres with atrophy and disappearance is evident. The deposition of lime salts appears to be in the muscle fibres.

In connection with these changes the writer describes also hypertrophy of the heart and changes in the liver of a cirrhotic nature.

These results confirm the observations previously made by Josué, who also describes a tendency to the formation of small aneurisms. Both investigators ascribe the lesion to an injury of the vessel wall produced by the increased blood pressure.

A Study of the Etiology of Variola.

W. T. HOWARD, JR. AND R. G. PERKINS. *Journal of Medical Research*, 1904, xii, 395.

This work is important as the first confirmation of the views held by Councilman and his associates and by Calkins concerning the etiology of variola. It is a very careful and comprehensive histological study of the bodies occurring in the skin lesions of the disease, and completes an investigation covering a period of two years. The earlier studies which have already been published had for their object the demonstration of a bacterium as an etiological agent; negative results only were obtained.

The histological study of the skin is based on material from seventeen cases; in eight removed during life and in nine at autopsy. The technique was essentially that described by Councilman and by Calkins. As a result of their studies, the writers give the following stages of the development of the Cytoryctes Variolæ:

1. Primary cytoplasmic stage found in the earliest lesions and in autoinfection about vesicles: This stage begins with a small, round homogeneous, deeply staining body, which develops into a large, ameboid multi-chambered organism and breaks up with the discharge of gemmules, identical with the bodies primarily invading the epithelial cells.

2. Secondary cytoplasmic stage. The earliest forms recognized are from one and one-half to two microns in diameter, surrounded by a definite spore or egg (?) membrane. These increase in size, develop chromotophile dots and fragment or segment, with the formation of oval cytoplasmic bodies with a central chromatin mass. From four to eight of these oval segmented bodies may be present in a single

cell. These bodies escape from the cells in which they form and invade other cells, whose nuclei they enter, and by further development constitute the earliest forms of the next stage.

3. Primary intranuclear stage: These ameboid bodies, representing the pansporoblast, first develop numerous dense dots staining deeply with nuclear stains. These dots later become rings,—the primary sporoblasts in which spores develop.

4. Secondary intranuclear stage: This stage begins with the invasion of fresh nuclei by the spores of the preceding stage, which form secondary sporoblasts developing numerous chambers, each containing a spore.

Cirrhosis of the Liver and Diseases of the Blood. (*Ueber Lebercirrhose und Blutkrankheiten.*)

T. BLEICHROEDER. *Virchow's Archiv*, 1904, clxxvii, 435.

Bleichroeder's work is an interesting but not convincing attempt to trace a similarity between cirrhosis of the liver and diseases of the blood. By comparing the histology of the stomach, intestine, spleen and bone marrow in the chronic passive congestion of cirrhosis with that of heart disease he finds changes in the former which are somewhat analagous to those found in diseases of the blood (leukæmia and anæmia) and which do not occur with the cardiac congestion. If the changes were due merely to the mechanical effect of congestion they should be the same in each condition. As they are not, he assumes that the reason for this difference, as well as the cause of cirrhosis, must be sought in the organs drained by the portal system. Comparing the stomach of cirrhosis with that of heart failure, the former shows a smaller blood content, a greater increase of the interstitial tissues and of lymphoid elements and a larger number of hyaline bodies in the mucosa. These hyaline bodies Bleichroeder believes to be due to a transformation of the acidophile cells, which are also more abundant in association with cirrhosis than with the cardiac lesion. The increase of iron-containing pigments also is more evident in the congestion of cirrhosis.

Bleichroeder emphasizes the similarity of these changes in the stomach of cirrhosis with those occurring in various diseases of the blood (the anæmias and leukæmia).

Comparing the appearance of the spleen in the two conditions he finds in the cirrhotic spleen differences in size and consistence, which with an increase of lymphoid cells and of cells containing pigment, are also somewhat similar to changes in leukæmia.

The bone marrow, also, of cirrhosis is often red, of the myelocytic type, with much pigment, and contains chareat-seyden crystal, as does that of leukæmia.

From these facts he evolves the theory that some agent in the portal circulation stimulates the formation of lymphoid cells in the spleen and that these pass into the blood stream in increased numbers (Lymphocytämie) and reaching the liver accumulate about the vessels of the portal spaces. Here they become transformed into connective

tissue. Cirrhosis, therefore, the writer holds, is not a primary disease of the liver, but is secondary to changes in the blood of the portal system. Bleichroeder quotes freely from the literature in support of his theory, dwelling especially on Banti's disease, with its spleen tumor, blood changes and secondary cirrhosis.

The work is perhaps interesting as an attempt to approach the subject from an entirely new point of view, but deserves no serious consideration as an explanation of the pathogenesis of cirrhosis.

PEDIATRICS

Edited by Henry L. K. Shaw, M. D.

Erythema Infectiosum, A New Acute Exanthem. (*Erythema Infectiosum, ein neues akutes Exanthem.*)

ESCHERICH. *Monatsschrift für Kinderheilkunde*, November, 1904.

Scarlet fever, measles and German measles form the well-known trio into which are diagnosed all the acute contagious exanthemata. It is often difficult, and many times it is impossible, to do this conscientiously. Under the diagnosis of rōtheln a number of different eruptions have masqueraded. From a careful study of the history of rōtheln and of the epidemics reported one would be led to believe that it has no sharply-defined characteristics. That it has no one who has had experience in the eruptive diseases of childhood will deny.

Many of the cases described in the literature as rōtheln or abnormal types of rōtheln belong etiologically and clinically to a new disease termed by Sticker "Erythema infectiosum seu contagiosum." A rather widespread epidemic prevailed last spring in Vienna and Escherich was able to critically study a large number of cases. He presented some before the Vienna Society of Physicians. He had several opportunities to correct diagnoses of scarlet fever and measles given by physicians to cases he was called to see in consultation. The physicians in Vienna made a diagnosis of rōtheln in many of these cases, but Pospischill, who is the director of the large infectious disease pavilions of the Wilhelmina Kinderspital, recognized the essential differences and wrote an article in the *Wiener klinische Wochenschrift*, describing what he believed was a new and heretofore unrecognized exanthem.

This disease occurs in epidemics very frequently at the end of an outbreak of measles, and is observed chiefly in families, schools, kindergartens, etc. Most of the cases occur between the age of four and twelve years. The incubation period is from six to ten days. The onset may be attended with slight sore throat and weakness, but oftener there are no subjective symptoms throughout the entire disease. The eruption is the distinctive feature. It affects only the external skin. It begins on the face with an intensive redness and turgescence. This is sharply limited by the nasolabial fold where it is in great contrast to the pale region about the chin and mouth. The redness and swelling diminish about the ears. The mother often regards this, which is the most constant and most characteristic appearance of the disease, as a healthy sign of youth.

On the forehead and about the ears are found large spots of a bluish red color, which are similar to those found on the trunk and extremities. The extremities show the most marked eruption. On the inner surface of the arms the eruption is often confluent. The gluteal region is always thickly covered with the rash. On the trunk the rash appears last, and is only slightly affected and may even be free from eruption. The eruption is visible from six to ten days. It disappears first from the face and body, and remains longest on the extremities. On the extremities it often has a lace work or even geographical contour. It may disappear, and slight friction or heat will bring it out again distinctly.

The author gives a historical sketch of this affection and shows that Tschamer, in 1889, in Graz, first described the eruption accurately, but classified it as abnormal r  theln. Escherich himself, at Moscow, in 1896, first made the claim that these cases and others described later were not abnormal types of r  theln, but constituted a separate and distinct disease.

Essential Albuminuria. (Ueber essentielle Albuminurie.)

POSNER. *Zeitschrift f  r klinische Medicin*, 1904, Band 53.

It is twenty years since the author first discovered small amounts of albumin in the urine of healthy people. Later investigations have brought out much that was new, especially in regard to variations of the urinary albumins. Leube, in a recent review of physiological albuminuria, divides clinically healthy people into three divisions, those that continuously pass albumin, those that after definite irritation or under certain conditions pass it and those who do not secrete albumin under any circumstance. In the first division the kidney is permeable for albumin, in the last not at all, and between these is the form in which different conditions, as muscular over-exertion, vertical position and mental distress may cause the kidneys to become permeable. These are the cases of cyclic and orthostatic albuminuria. A special group is the albuminuria of puberty which, according to Leube's opinion, always depends on previous morbid conditions, as anaemia and cardiac insufficiency. These by careful treatment progress favorably, but at times may pass into true chronic nephritis.

Hauser has recently given out a warning against the false security of albuminuria without disease of the kidney. He shows, especially in children, that almost all cases of orthotic albuminuria have developed from an infectious nephritis. The writer also believes that the presence of casts, especially the pale hyaline variety, is not always significant of nephritis. In this form of albuminuria, however, casts are seldom found. More important are the other differences in the urine. That of contracted kidney is abundant, pale and continuously low specific gravity. In all these cases judgment should be withheld until after long observation no other symptoms of kidney disease have developed.

The writer gives the history of an anaemic and neurasthenic patient who has had albumin in his urine for twenty years without any evidence of disease of the kidney. Although some might claim that this condition is of itself pathological, the reply could be made that the absolutely normal man does not exist. Naturally the diagnosis essential albuminuria is only

provisional, as it is possible that later the true changes may be determined and a diagnosis based on pathological anatomy made.

In regard to the albuminuria of puberty, the question arises if such patients should be kept in bed, placed on a milk diet and removed from school. The author believes one should not be too anxious about this symptom, and regards it as an evidence of anaemia, cardiac insufficiency or sexual excesses. Hauser obtained satisfactory results in these cases from systematic physical training. Strict observation with repeated examination, not only of the urine but of the whole body, is the physician's duty, and in that way only can the symptom albuminuria be correctly valued.

The Value of the Addition of Citrate of Soda to Cow's Milk in Infant Feeding.

POYNTON. *The Lancet*, August 13, 1904.

In the search for a suitable substitute for mothers' milk two rather different principles are involved. One of these is to keep in mind that human milk is a vital fluid and that its elements are very subtly blended. The other is to keep in view the percentage composition of the chief elements. Those who are impressed with the subtle composition of milk seek to replace it by using other milks, such as asses' or cow's milk, either unaltered or simply diluted. The followers of the other principle are inclined to the use of modified or substituted milk. The one dwells upon the nature of the elements; the other on the amounts.

The author does not believe in the percentage modifications of milk, or, as he terms them, "milk with bovine bodies and human faces." The practical difficulties in rendering cow's milk digestible for human infants are considered and the danger of the promiscuous use of the patent foods pointed out. "As the ant rushes about panic-stricken with its egg, so the mother rushes with her baby from one food to another and from one medical man to another."

The solution of this perplexing problem the author finds in the use of citrate of soda. He believes that the rennet curd of cow's milk is more indigestible than the acid curd. The rennet will not act in the absence of lime salts. Citrate of soda has the property of precipitating the lime salts. The lime salts being precipitated, the clotting by the rennet will be delayed until the acid secretions of the stomach are more abundant. The clot will then be less firm in its consistence and more digestible. Cow's milk can afford the precipitation of some of its lime salts, as they are in it in great excess as compared with human milk.

The procedure is very simple and consists of diluting the milk with boiled water in accordance with the weight of the child, and then adding citrate of soda in the proportion of one grain to the ounce of milk.

This salt is practically tasteless and being a neutral salt does not inhibit the secretion of the gastric juices as do the alkaline salts.

The indications are as a routine measure for weaning a healthy baby on to cow's milk and for correcting milk dyspepsia.

The advantages as summarized by the author are, (1) it renders the

curd of cow's milk more easily digestible; (2) it is cheap; (3) it is convenient to handle, easy to control, and progressive in principle; (4) it allows the milk to be given in a more concentrated form and thus avoids to some extent the danger of underfeeding; (5) there is no danger of scurvy; (6) given as a medicine it gains the confidence of the mother.

Tuberculosis of the Peritoneum in Childhood (Tuberculose du p ritoine dans l'enfance.)

GOEFFERT. *Archives de M decine des Enfants*, August and September, 1904.

Out of ninety-four autopsies on tubercular children in *Haushalter's Clinic* the peritoneum was affected nineteen times. In only eight cases was the tubercular process limited to the lungs and in the remaining eighty-six cases the infection was more or less general. The bacillus of Koch produces in the different organs clinical symptoms so diverse that it is sometimes difficult to reconcile them.

The author discusses the various classifications of tuberculous peritonitis and recommends the following:

- I. Acute miliary tuberculosis. (1) Peritoneal granulations.
- II. Diffuse subacute tuberculosis. (1) Tubercles under the peritoneum (without inflammation.) (2) Caseous form (a) dry, (b) ascitic. (3) Fibro-caseous form.
- III. Tuberculosis limited to the peritoneum. (1) Ascitic form. (2) Fibro-caseous form. (3) Dry fibrous form.

The pathological anatomy of each of these groups is described and illustrated with the records of nineteen cases. The infecting agent is carried to the peritoneum through the blood and lymph channels. In many of the cases where the tuberculosis is limited to the peritoneum the infection takes place through the pleura which receives the germ from the bronchial glands without any participation of the circulatory apparatus.

Tuberculous peritonitis is rare before the third year of life and is most frequent after the fifth year.

The author takes up the symptoms of the various types in detail. In the form found in the course of a diffuse subacute tuberculosis he laid stress on the Kissel sign. This is a thickening of the peritoneum and is detected by pinching and rubbing the abdomen between two fingers. The ascites in this form is not great but the abdomen is distended and has an ovoid shape due to distension of the intestine with gas, the result of an intestinal paralysis. He discusses the anatomical localisations of the peritonitis and of cases having an abnormal course. The diagnosis of the various types is described in detail. The mortality from the acute miliary form is one hundred per cent., from the ulcerous form sixty-six per cent., the fibrous form seventeen per cent., and the ascitic form nineteen per cent.

The author summarizes his view on the treatment as follows. A child with acute or subacute generalised tuberculosis presenting secondary symptoms of a localisation in the peritoneum requires no other treatment than that of the tuberculosis in general. If the peritoneal symptoms are

most prominent together with fever, emaciation, pulmonary involvement, etc., a symptomatic treatment should be carried out as the prognosis is hopeless. In tuberculous peritonitis where the tubercular process is limited to the peritoneum, the treatment should be medical. Several surgeons are quoted in support of this view including Ochsner of Chicago who is in favor of operating only on those cases which show no improvement under long continued medical treatment. The author believes that a laparotomy is only indicated in the encysted forms which tend to suppurate and burrow towards the skin, and in cases of intestinal occlusion.

Seven Cases of Infantile Scurvy.. (Sept cas de Scorbut Infantile.)

COMBY. *Archives de Médecine des Enfants*, October, 1904.

Infantile Scurvy (Säuglingsscorbut.)

NEUMAN. *Die Deutsche Klinik*, 1904.

Comby has observed seven cases of scurvy in infants in the past seven years. Five of these were boys and two girls and the ages ranged from seven months to nineteen months. All had been fed artificially on milk that had been sterilized. The first symptoms appeared from five to eight months after using the sterilized milk. All the children had teeth, and spongy bleeding gums or simple ecchymoses on the gums were the first signs of the disease. Subperiosteal haematomas were present in all cases and produced in several cases a pseudo-paraplegie douloureuse. There was a profound anemia in two cases with oedema of the extremities and a purpuric eruption. The haematoma in one case strongly simulated a fracture of the femur but a radiograph showed that the bone was intact and antiscorbutic treatment cleared the condition in a few weeks. None of the cases had been sent to the hospital with a correct diagnosis. Four had been diagnosed as acute articular rheumatism, the others as osteomyelitis, osteo sarcoma and subperiosteal fracture. The prognosis is very favorable when the diagnosis has been made. The cases all recovered within four weeks.

The treatment is very simple and consists in substituting fresh milk for sterilized milk and giving the juice of fruits and vegetables.

Neuman reviews this disease historically and gives the credit of its first recognition to Möller in 1859. His paper is based on fifty-four of Heubner's cases and forty of his own all of which were observed in Berlin. This disease is becoming more frequent in Northern Germany while it is only rarely met with in Southern Germany and Austria. All of the cases analyzed by the author were in infants who had been fed for several months on artificial heated food. The author agrees with the conclusion reached by the American Pediatric Society that sterilized milk is the chief etiological agent. Scurvy is nearly always found among children of the better class because poor people are not able to purchase an apparatus for the home sterilization of milk. Researches made along anatomical and physiological lines during the last few years have failed to throw any light on the underlying cause. Neuman thinks that a more

or less pronounced disturbance of the molecular composition of the milk takes place on heating. This affects chiefly the albuminoids which give off such products as leucin tyrosin, etc. These products are further broken up during digestion into ammonia and other harmful products. Scurvy according to the author is the result of a chronic toxæmia. The poisons may either be obtained exogenously through bacteria, chemical changes from the effect of heating the milk or endogenously resulting from the digestive tract. This disease has not been generally recognized in Germany chiefly because the knowledge of its manifold clinical forms has not been disseminated. It has been confounded with difficult dentition, ulcerative stomatitis, osteo-sarcoma, syphilitis, osteo-chondritis, rachitis, rheumatism, etc. Proper treatment will clear up the diagnosis in a few days. The author has the best and quickest results with raw milk. He sometimes supplements this with orange juice or other vegetable juice.

Concerning the Passage of Antitoxin Through the Intestinal Walls of Infants. (Ueber den Durchtritt von Antitoxin durch die Darmwand des menschlichen Säuglings.)

B. SALGE. *Jahrbuch für Kinderheilkunde, Band 10, Heft I, 1 July 1904.*

Stimulated by the work of Behring and his pupils on the possibility of the immunization of infants by feeding them with the raw milk from cows artificially immunized to tuberculosis, Salge endeavored to ascertain whether specific antibodies are absorbed from the alimentary canal unchanged and the conditions surrounding such absorption.

Römer in 1901 found no antitoxin in the blood of a new born colt delivered from a mare actively immunized against diphtheria. The mare's blood contained fifty and her milk five units of antitoxin per cubic centimetre. In four and in twelve days the colt's blood showed one-tenth and five units of antitoxin per cubic centimetre respectively. From the latter time it gradually lost in strength although in the meantime the active immunization of the mare had been resumed and the antitoxic content of her blood and milk had increased. The same result was obtained in the case of a rabbit and her young. Later when the colt was older it was fed antitoxic serum, but the latter was not absorbed into the circulating blood. The mare's milk was fed to a rabbit, but the antitoxin in it was not absorbed as such.

Römer, in an endeavor to determine the destiny of the antitoxin fed, found proportionately small amounts of it in the faeces, intestinal contents and intestinal walls of the dead animals. He does not believe the antitoxin is destroyed in the alimentary canal, but believes it is prevented from absorption in adults by some anatomical barrier in the intestinal mucous membrane.

According to Salge, Römer, in believing the barrier to absorption is a question of increased age, disregarded the possible differences between the antitoxin in milk and that in serum, and also failed to make his tests with homologous proteids.

While Escherich had already shown that diphtheria antitoxic serum did not pass unchanged through the wall of the alimentary canal of human infants, he did not work on very young children, and his methods were not those of to-day. Salge, therefore, decided to determine whether infants varying from five days to six months in age could absorb unchanged antitoxic horse serum given with their food. It was necessary, therefore, to test the serum before and after these feedings, and he employed the method used in Ehrlich's laboratory by Marx for the determination of the antitoxic value of weak serums. The serums of nine infants fed along with human milk or other food, with varying amounts of antitoxic serum up to 3,000 units, were thus tested. In no case was the normal antitoxin, which was a variable factor, increased after the serum feedings. Having, therefore, confirmed the work of Escherich, showing that antitoxin from horse serum was not as such absorbed from the alimentary canal into the circulation of infants, he set about to ascertain whether normal human milk-bound antitoxin could be absorbed as such into the infant blood. *A priori* this was to be expected, but he desired to prove it. One of the infants whose serum had shown but little normal antitoxin was given to nurse at the breast of a mother of one of the other babies whose serum had shown a decided amount of antitoxin. After ten days of this feeding the antitoxin strength of the blood of the transferred child had doubled, indicating the absorption of the milk antitoxin into the circulation.

As Ehrlich had shown in animals that the passive immunization of the mother increased the antitoxin in the milk, Salge gave the woman 4,500 units of antitoxic serum subcutaneously. As a result the child's serum, which had already gained in antitoxic strength, had a further increase of three times that amount of antitoxin during the next seven days of nursing, but had lost all this latter gain by the fourteenth day. This rise and fall clearly shows that the antitoxin injected into the mother was absorbed by the child from her milk.

In all of these tests Salge shows mathematically that the amounts of antitoxin injected or fed, the amounts of milk fed and the possible amounts of antitoxin thereby available for absorption are at least more than large enough to account for the increase in the antitoxin content of the infant's blood.

The lack of absorption of antitoxin when fed as serum, and its apparent ease of absorption when fed in the form of homologous milk, speaks strongly against Römer's theory of an anatomical barrier to absorption in the intestinal mucous membrane.

The difficulty lies either in a difference between the antitoxin in milk and that in serum, or is due to the use of antitoxin proteids from heterologous sources. To establish the possible influence of the latter factor, Salge is about to feed infants with the milk of actively immunized animals.

H. D. P.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

*A Note on the Treatment of Syphilis.*JONATHAN HUTCHISON. *The Practitioner*, August, 1904.

Those who have read Astruc's elaborate "Treatise on the Venereal Disease" will not be wholly indisposed to sympathize with the author in his expression of belief that the last word has been said as to the treatment of syphilis. He held that mercury had proved to be the remedy in comparison with which none other ought to be mentioned, and that the best mode of introducing it into the system was by inunction. So definite were his views as to the efficacy of this drug and the safety with which it might be used that he even suggested that the miseries resulting from the advent of syphilis had found a large counterbalancing asset in the gain to the community by the removal of previously existing prejudices against this drug as regards other diseases. It is a remarkable fact that mercury obtained its reputation almost immediately after the introduction of syphilis into Europe, when a large quantity of the pills known as "Barbossa's" were furnished for the treatment of Francis First. During the two centuries since Astruc wrote, we have had our non-mercurial school, we had syphilization, sub-cutaneous injection, the use of iodo-mercurial salts and the fumigation method. Dr. Hutchinson believes that Astruc was right, that crude mercury is the one specific for syphilis, and that there is no more effectual way of fusing it than by rubbing it into the skin, and adds, that those who prefer the administration by the mouth, of whom he is one, do not do so in the belief that it is more effectual, but simply because it is far more convenient. To our forefathers all sores on the genitals resulting from impure intercourse were syphilitic, and for all mercury to pytalism was prescribed without compunction. Thus it is not improbable that the entire suppression of the disease in its very beginnings was often accomplished. We know that by beginning mercury before the development of the secondary symptoms, that stage may be entirely prevented. The earlier the remedy is commenced the more effectual it appears to be in attaining this result. The prevention of the late or tertiary phenomena is by far the most important aim in the treatment of syphilis. Those of the secondary stage being transitory, it is exceedingly probable that the anticipation of the secondary stage and the prevention of its development is of paramount importance in preventing those of the tertiary class. Viewed in this light, it is scarcely possible to exaggerate the importance of what has been called the suppression treatment. One should never wait to use mercury until the secondary eruption on the skin appears in the vain belief that possibly the sore is non-specific.

Next in order to the question as to how early mercury should be used is, how long should it be continued and whether interruptedly or continuously. It appears very difficult to allege any good reason why a course which is not interfering with the health of the patient

should be so interrupted as to give the specific virus any chance of renewing its activity. Hutchinson prescribes a pill containing one grain of grey powder and one of Dover's powder after each meal and only three times a day at first. If no diarrhœa follows after a few days, the pill is given four, five, or six times a day. All soups, fruit, and green vegetables are peremptorily forbidden, and from the first the patient is told that the treatment and the precaution must be continued without any intermission whatever for a year at least. An alum mouth wash is usually prescribed with a view to prevent ptyalism. The patient is allowed to pursue his usual vocations, but is advised to spend as much time in bed as possible. If there is debility, a grain of quinine is added to each pill. Under this treatment it is very rare to see throat or skin symptoms. Treatment should begin as soon as the character of the sore is definite. In some of the cases which come under observation after the secondary symptoms have appeared it is necessary to give iodid of potassium in a fluid dose in connection with the mercurial pill. He regards the iodides of mercury as less manageable than the two given separately. The iodides should be avoided in the early stages.

The Treatment of Syphilis at Aix-La-Chapelle.

ANTON LIEVEN. *The Practitioner*, July, 1904.

All efforts to replace mercury by other drugs in the treatment of syphilis have so far proved unsuccessful. Even in the treatment known as the "Aix-la-Chapelle method," it is upon mercury that the chief reliance is placed, the sulphur waters being used merely as adjuncts which enhance the effect of the drug.

The objections to the use of the drug by the mouth are: the slowness with which the effects of the drug are manifested; the rapidity with which it is excreted, and the irritation which it causes to the gastro-intestinal tract. The objections to the subcutaneous injection of the soluble salts are, that the process is extremely painful; that their administration has to be repeated daily, and that they are too rapidly excreted. On the other hand, with the insoluble salts, such as calomel, when once the injection is made, we are no longer in a position to influence the degree or rapidity of absorption. Cases have been recorded in which a dose of an insoluble salt of mercury has lain dormant in the system for months, and has then passed rapidly into the circulation, giving rise to urgent symptoms. Some deaths even have occurred from this cause.

The "Aix-la-Chapelle system" consists in the inunction of ungu. cinereum (blue ointment) in conjunction with the external application and internal administration of the mineral waters natural to the place.

The mercury is introduced into the economy by way of the sweat-glands, sebaceous glands and hair-follicles. The sulphur waters open the mouths of the glands and follicles and facilitate absorption. The alkalinity of the waters promote desquamation and cause a determination of blood to the part into which the mercury is to be rubbed

immediately after the bath. The drug finds its way, probably in a gaseous state, into the general circulation by way of the lymph passages, and is thence distributed throughout the entire body in the form of albuminate of mercury. The temperature of the baths is so regulated as to increase or diminish the evaporation of the mercury already present in the glands and follicles. The more the patients are kept in the open air the better they are, both mentally and physically. Every moment possible is spent out of doors and the windows of the sleeping rooms are kept open day and night. When it is considered desirable to evoke a still more energetic action of the drug, this is accomplished by means of thermal vapor baths or douche-massage baths. On the conclusion of the bath the patient is conveyed to his bed, where he is allowed to perspire freely for some time and then placed in an ordinary thermal bath at a temperature of from 93° to 95° F. Notwithstanding the increased absorption of mercury rendered possible by these balneary measures, it is only very rarely that any symptoms of mercurialism arise. The stomatitis and intestinal catarrh are prevented by frequent rinsing of the mouth with a suitable wash and a careful attention to the teeth. In cases of constipation the processes of decomposition are removed by means of a few teaspoonsful of Aix-la-Chapelle salts. In rubbing, the axilla and the region between the scrotum and the thigh are avoided, because eczema might easily be set up in these regions. It is also essential to avoid pressure on superficial bones, such as the shins and ribs. Thirty-three per cent. grey ointment (blue or mercurial ointment) is used, rubbed in for twenty minutes. On the first day the legs are rubbed; on the second, both the thighs; on the third, the back; on the fourth, the abdomen and flanks, and on the fifth day the arms. These inunctions are repeated again and again in that order until the requisite number has been attained and the ointment thus rubbed in is not removed with the towel after the bath on the following day. When each section is prepared for a fresh inunction it is scrubbed with soap and water at a high temperature. Before each course the urine should be examined for albumen, chronic nephritis being a contra-indication for inunction.

The treatment lasts from four to six weeks, according to the nature of the case; and it is the custom to give fourteen additional inunctions after the final disappearance of all symptoms.

In the tertiary stages inunction alone does not seem to suffice and here there is added the use either of iodide of potassium or iodide of sodium internally or iodipin by subcutaneous injection.

A second course of treatment like the first is usually necessary in about six months, the system remaining fully mercurialized for about that length of time, and a third at the end of six months more. If no symptoms appear in the interim, twelve months are allowed to elapse between the third and fourth course.

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THE SYMPTOMATOLOGY AND LOCALIZATION OF TUMORS OF THE CEREBELLUM

WITH THE REPORT OF

THREE CASES OF TUMOR OF THE CEREBELLUM AND ONE OF
THE FOURTH VENTRICLE, WITH THREE AUTOPSIES.

Read before the Medical Society of the County of Albany January 11, 1905.

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The three cases of cerebellar tumor, together with the one of the fourth ventricle herein to be reported, illustrate very forcibly the symptoms characteristic of cerebellar disease. In each case the general symptoms of brain tumor were well marked, *i. e.*, severe headache, vomiting, mental irritability, dizziness and optic neuritis, while the local symptoms were very prominent, namely vertigo, nystagmus, cerebellar ataxia or staggering, with near or distant pressure symptoms, such as unilateral cranial nerve involvement, paresis or paralysis of the extremities, of one or both sides intention tremor, and rigidity and retraction of the neck. Friedeberg found this retraction marked in over half of the cases in Aufrecht's Clinic.

The headache experienced in cerebellar tumor is usually very intense, and while not strictly localized, is most often occipital or frontal in character. When in the former position it often radiates down the back of the neck and is frequently accompanied by more or less rigidity of the neck. Tenderness of the scalp and of the occiput on precussion is said by M. Allen Starr to be a valuable sign of cerebellar disease; it was marked in case three of this series. The headache is probably due, as Mills suggests,

to irritation from pressure of the tentorium, as small neoplasms developing in the interior of the cerebellum, are often unaccompanied by this symptom. While the general symptoms are of no particular localizing value, the presence of severe occipital headache, general or unilateral, with oft repeated vomiting, and intense vertigo, are highly suggestive of a cerebellar lesion.

Altogether the most interesting focal symptom of cerebellar tumor is the so-called cerebellar ataxia, or titubation. There are two types of this ataxia: first, the common type in which the patient from a lack of improper coordination walks like a person intoxicated; second, the ataxia type, the gait resembling closely that of a person with locomotor ataxia. In the first form the progression is staggering and uncertain, the feet are spread wide apart, so as to broaden the base of support, and the patient sways from side to side, or walks in a zig-zag fashion without spasmodic movements, or the bringing of the heels down with a stamp. There may be a tendency to fall forward or backward or to one or the other side. Bastian likens the gait to that of a person who walks on the deck of a vessel in a rather rough sea. The ataxia of this type is not increased by closing the eyes, hence Romberg's symptom is absent. The second form of cerebellar ataxia is very rare and can not be differentiated from that of a patient with tabes. In this form, the ataxia is increased by closing the eyes (Romberg's symptom). The gait is similar to that of a tabetic, and when the patient is in bed, distinct ataxic movements may be brought about by the usual well known manoeuvres. This type was present in case two of this series. Both forms are usually present only in the lower extremities. The upper extremities rarely suffer, but when involved the ataxia never interferes with the fine adjustments, but only with extensive movements in space.

Tremor. A coarse intention tremor resembling closely the tremor of multiple sclerosis is quite often observed in cerebellar growths. Luciani believes that the tremor is due to nothing more or less than the astasia of muscles heightened or only appearing when the musculature is set into activity. He attributes the tremor to imperfect fusion of simple muscular contractions. Much discussion, however, has ensued in reference to the exact production of this tremor. Bruns and Weiland hold that the tremor is due to the pressure of the growth on the cortical motor neurones of the pyramidal tracts in the crura

cerebri, pons or medulla. Ferrier and Turner on the contrary, have described similar tremors, resulting from section of the superior cerebellar peduncles in monkeys, they found that if a peduncle was divided between the cerebellum and its decussation in the tegmentum, the tremor was confined to the side of the lesion, and suggests that in clinical cases one might explain the crossed tremor in unilateral lesions, by an affection of the superior cerebellar peduncle above its decussation.

In this connection will be briefly mentioned the very interesting cases of Bonhoffer and Sander. A merchant, aet. 55, had vertigo, headache and pain in the arms, shoulders and legs, with marked choreiform movements in the right arm, and involuntary movements in the legs, especially the right. Movements of the same character were observed in the face and tongue. Ataxia existed in both legs, most marked in the right, also in the right arm. Slight lateral nystagmus was present. Autopsy showed a carcinoma of the distal end of the posterior quadrigeminal bodies, involving the decussation of the superior cerebellar peduncles. The fillet and oculomotor nucleus of each side were normal. Sanders describes the following case: A postal clerk, aet. 72, had for four years after an apoplectiform attack, left sided hemiparesis with disturbances of speech. Lively choreiform movements of the arm and leg of the right side existed. The right patellar reflex was absent. There was right-sided abducens paralysis. Double optic neuritis was present. The autopsy showed a gliosarcoma, rather larger than a walnut; which completely destroyed the right corpus dentatum. In the adjacent white matter external to this tumor existed another small growth.

In six of the eleven cases in literature, namely, those of Bruns, Weinland, Eisenlohr, Lilberg, Bonhoffer and Gordinier, in which lesions of the corpora quadrigeminal region were accompanied by tremor or choreiform movements, the superior cerebellar peduncles were involved. Both Bruns and Weinland believe that the tremor is due to irritation of the motor fibers of the pyramidal tracts, although in the cases they report, the autopsies showed the motor tracts to be normal, while the superior cerebellar peduncles were diseased.

Nystagmus, in reality a form of tremor, is a symptom, which affords positive evidence of organic disease, and although not always present, it occurs in a large percentage of the cases of

cerebellar growths. It is usually bilateral, the oscillations being horizontal, rotatory or vertical in character. Many theories have been advanced explanatory of this symptom in connection with cerebellar disease, and while the causative factor in its production still remains obscure, it may possibly be due to any one or more of the following conditions: *first*, irritation by pressure of the centers in the pons, associated with lateral ocular movements (nuclei of sixth nerves); *second*, interference with the orderly conduction of the dorsal long longitudinal bundles, preventing the proper associational functioning, of the extrinsic ocular muscles; *third*, destruction of the flocculus may cause typical nystagmus, and a few carefully recorded cases are on record corroborating this statement; *fourth*, irritation from pressure of the quadrigeminal bodies. Adamuck was able by irritating these bodies, to create oscillating movements of the eyeballs.

Vertigo occurring as a symptom of cerebellar growths is usually very intense and persistent, and while most marked in the erect or semi-prone position, is often present in recumbency. The patient feels as if objects were constantly moving in front of him, or that he was moving about in space. This symptom, so common but more evanescent in many other intracranial affections, as well as general diseases, is of itself, of no special value in localization, but when associated with cerebellar ataxia becomes of great import. It would be well to mention at this junction that optic neuritis, a very general symptom, is more often present with cerebellar new growths than with any other form of intracranial disease, hence its presence accompanied by focal cerebellar symptoms may be of considerable diagnostic value. Martin found optic neuritis present in eighty-nine per cent. of the cases of cerebellar tumors, while it was absent in two-thirds of the cases of tumors of the callosum, pons and oblongata.

The condition of the patellar reflexes in cerebellar growths depends upon the position of them. If by extension forward the pyramidal tracts are compressed the knee jerks are greatly exaggerated, if, however, the motor tracts are not affected and the tumor involves the median lobe the reflexes are either diminished or absent. No satisfactory explanation has thus far been advanced to explain this latter peculiarity. It is a well known fact that a lesion destroying the cortical motor neurones is accompanied by increase of the knee jerk. May it not be, as

Gowers suggests, that the influence, the loss of which leads to increase, may unrestrained have the opposite effect, and the cerebellar disease may involve the loss of controlling and guiding upward influence on the cerebral cortex?

Despite the numerous and important anatomic connections of the cerebellum with the rest of the cerebrospinal axis, only two focal diagnostic symptoms exist by means of which a cerebellar lesion may be localized. These are, in order of their importance, cerebellar ataxia or staggering and vertigo?

LESIONS OF THE MIDDLE LOBE, OR WORM.

Lesions of this lobe are nearly always accompanied by the most exquisite cerebellar ataxia combined with severe vertigo. Nothnagel long ago pointed out that cerebellar ataxia is always due to a lesion of that lobe or by the encroachment upon it, of a lesion which has had its origin in a cerebellar hemisphere. The above statement of Nothnagel is supported both by Gowers and by M. Allen Starr; the latter observer states that the occurrence of staggering indicates that the middle lobe is either the seat of the tumor, or is encroached upon, by a tumor in the hemisphere. If the ataxia occurs early in relation to the general symptoms, it is the middle lobe in which the tumor began. If it occurs late, after months of suffering, the tumor has started in a cerebellar hemisphere, giving rise to general symptoms, and has at last reached the middle lobe, producing the local symptoms.

According to Flourens and Renzi, experimental destruction of the anterior part of the worm, or middle lobe, causes an inclination to fall forward; while a lesion of the central and posterior parts causes the head to be pulled backward, with a tendency to fall in the same direction. Bastian believes that a tendency to fall forward exists when the lesion involves the inferior worm; but when the lesion involves the superior worm, a tendency to fall backward occurs.

Several cases have been recorded to support the following statement of Wetzell and Bohm, namely, that cerebellar incoordination, or ataxia, only occurs in diseases of the posterior part of the middle lobe; when the lesion exists in the anterior part no incoordination occurs.

LESIONS OF THE CEREBELLAR HEMISPHERES.

Lesions in either hemisphere of the cerebellum become localizable only when the lesion encroaches upon the middle lobe or

neighboring parts, *viz.*, the crura cerebri, pons or medulla. Several cases are on record of complete absence (Agenesis) of one or the other cerebellar hemisphere, the loss occasioning no symptoms whatsoever. The recent experiments of Luciani and Turner prove that when a lesion is located in a cerebellar hemisphere, weakness (paraesthesia, paratonia, astasia) and irregularity of movement occur in the extremities corresponding to the side of the lesion. Ferrier, on the contrary, states that lesions of the cerebellum, while interfering with the mechanical adjustments against bodily equilibrium, do not cause paralysis of voluntary motion. The above statement of Luciani and Turner does not seem to be supported by much clinical evidence. In most cases of cerebellar tumors accompanied by motor weakness or paralysis, this has occurred on the side opposite to the lesion, the result of pressure on the pyramidal tract above the motor crossway, either in the crus, pons, or medulla; with this paresis or paralysis there is often an exaggeration of the deep reflexes, together with ankle-clonus, and the presence of the Babinski reflex. The only cases in man with which I am acquainted, where paresis occurred on the same side as the lesion, was one of an abscess of a cerebellar hemisphere reported by Turner and the one reported by Acland and Ballance. The fact that the patient always staggers toward the same side is of no great clinical value in locating the hemisphere affected, as it is impossible to know whether the lesion be irritative or destructive in character. In about four-fifths of the recorded cases the patient has staggered away from the side of the tumor and in the remaining one-fifth toward the side of the tumor. Beevor has had two cases, in both of which staggering occurred on the side opposite to the lesion, in one of which a growth was successfully diagnosed and removed.

Cranial-nerve symptoms usually occur at first on the side of the lesion, hence internal strabismus, facial paralysis, either sensory or motor, deafness, or retraction of the head point toward an involvement of the cerebellar hemisphere on that side. If, with the early appearance of cerebellar ataxia, there occurs unilateral cranial nerve involvement, together with hemiparesis or hemiplegia of the opposite side, one may be positive in locating the lesion in the cerebellar hemisphere corresponding to the side of the cranial nerve involvement, and opposite to the paralyzed side. When incomplete ophthal-

moplegia occurs, preceded by cerebellar ataxia, the lesion is in the cerebellum and compresses the quadrigeminal bodies,

LESIONS OF THE CEREBELLAR PEDUNCLES.

Experimental division in animals of the middle cerebellar peduncle results in a rapid rotation of the animal around its longitudinal axis, and, according to Magendie, Renzi, and Schiff, toward the side of the section; but, according to Luciani, away from the side of the section. Lesions in the middle peduncle cause in man a similar tendency to rotation around the long axis of the body, and toward the side of the lesion, together with, as was pointed out by Nonat, a divergence of the eyes, the eye on the side of the injury being directed downward and inward, while the eye of the sound side is turned upward and outward.

In a case of Starr's of a tuberculous tumor in the left middle peduncle and vermiform lobe, in addition to ataxia, vertigo and headache, the patient lay constantly on his left side, and when he turned to the right, the vertigo was so extreme that he was obliged to resume at once his former position. In walking his patient would fall toward the left side, and found it impossible to turn around toward the right. In another case, a laceration of one medi-peduncle due to fracture at the base, caused constant vigorous movements of rotation about the long axis of the body toward the affected side for three days until death occurred.

Sections of the ventral or superior cerebellar peduncle in the tegmentum above the crossway, cause rolling around the long axis from the side of the lesion toward the sound side. Section at its exit from the cerebellum causes rotation in an opposite direction. Ferrier and Turner noted in the monkey, tilting of the chin to the crossed side, the occiput being drawn to the same side, together with flexion and adduction of the homonymous limbs, with tremor in them, increased on exertion.

Section of the dorsal, or inferior cerebellar peduncle: Since the early observations of Rolando and Magendie, this experiment has been practiced very often, and no discrepancy exists, in regard to the results. The resulting phenomena are incurvation of the neck and trunk to the side of the lesion, falling to that side, deviation of the eyeballs away from that side, and ataxia and coarse tremor of the extremities corresponding to the side of the lesion. There is often slight tilting of the occiput toward the

lesion, the chin pointing toward the eyes. All these phenomena have been observed in disease of the inferior cerebellar peduncle in man.

Two solitary tubercles of the cerebellum and one of the pons Varolii, producing cerebellar incoordination, with a distinct tendency to fall toward the right side, and strabismus of the left eye.

May 29, 1897. W. A., colored, aged 14. Father died of paralysis. Mother living and well. One sister died in infancy.

Present illness began in December, 1896, with a severe pain in the middle of the frontal region, preceded and followed by severe vomiting. He has had repeated dizzy attacks. In March, 1897, he noticed that his eyesight was failing. Has a roaring sound, like falling water, in the right ear. Has had no convulsions, cough or difficulty in swallowing.

Present condition. Slightly built, poorly nourished, muscles flabby, finger nails, lips and ears cyanotic. Epigastrium prominent. Chest flat. Respiration 28, and regular. Diminished respiratory murmur and dullness at base of right lung. Heart negative. Enlarged lymph glands at angle of jaw on each side. Marked rigidity of the neck. No tenderness of scalp or spine. No nystagmus. Pupils large, equal, and do not respond to light or accommodation. Internal strabismus of left eye. Vision practically nil, he can just distinguish light from darkness. Excursion of eyeballs normal in all directions, save outward movement of left globe. There is double optic neuritis passing on to atrophy. Tongue protrudes straight. Sense of taste and smell normal. There is marked incoordination in upper and lower extremities. Gait similar to that of a drunken man. There is no muscular weakness, but there is a distinct tendency to fall to the right.

Reflexes. Patellar reflex exaggerated on left side, normal on right. All superficial reflexes normal. No Romberg symptom present.

May 22, 1897. Patient died suddenly while walking across the floor. Autopsy same day at 8.30 p. m. Membranes not adherent and appear normal, save the pia-arachnoid in the inter-peduncular space which is cloudy. The olfactory nerves are flattened. There is a great increase of the subarachnoidean fluid. This was in part due to a rupture of the infundibulum draining the third ventricle. The lateral sinus on the right side is greatly distended with fluid blood. On the inferior and posterior surfaces of the right cerebellar hemisphere, exists a growth, dull grey in color. It is imbedded in the hemisphere and involves the median lobe, measures three by three centimeters, and produces a distinct prominence, one and one-half centimeters above the surrounding surface. It does not appear vascular.

In the superior and posterior part of the left hemisphere, exists a mass one centimeter in diameter, which is, in part, subcortical and of a much firmer consistency than the surrounding brain tissue.

On the left side of the ventral surface of the pons Varolii, exists a distinct circumscribed growth, one and one-quarter by two centimeters and has the same appearance as those in the cerebellum. The cranial nerves

are free, save the left sixth, which is compressed by the growth in the pons. The cerebral convolutions are somewhat flattened and the lateral ventricles are greatly distended.

The diagnosis of a tumor of the brain was based on the presence of the severe and continuous frontal headache, double optic neuritis passing on to atrophy, dizzy attacks and vomiting. As to its location in the cerebellum, the diagnosis was based on the following facts. The presence of a distinct cerebellar gait, with a tendency to fall to the right side, the distinct incoordination of the extremities, internal strabismus of the left eye, tenderness and rigidity of the neck and the absence of any other localizing symptoms. The large solitary tumor in the right hemisphere and median lobe, doubtless caused the cerebellar gait and the tendency to fall to the right, although the latter symptom may have been in part due to the tubercle in the pons.

The tumor of the left cerebellar hemisphere was entirely unsuspected and probably took no part in the production of symptoms.

The small growth in the left half of the pons caused the internal strabismus of the left eye.

The growth was thought to be a solitary tubercle from the presence of the enlarged lymph glands in the neck, and the physical signs in the right chest. The microscopical examination confirmed this opinion. A histological study of the growths showed them to be tuberculous.

Tumor of the right cerebellar hemisphere and median lobe, probably compressing the corpora quadrigemina, and right motor and sensory paths, in the pons, as well as the root fibers of the right abducens, facial, auditory, hypoglossal and fifth nerves; staggering toward the right side.

April 20, 1896. N. B. age 46, moulder by occupation, moderate drinker. Denies syphilis. Has never been ill since childhood. Mother and one brother died of hæmoptysis. Cause of father's death unknown. Present illness began about a year ago with occipital and frontal headache of a severe and shooting character. Last summer he sprained his ankle. This drew his attention to the fact that his gait was affected. The headache has continued day and night, and mental excitement greatly aggravates it. Has had no dizziness. Staggering began some time in August and from that time his gait has been like that of a drunken man. He can not walk without assistance and constantly sways toward the right side. Shortly after, and for a period of about three weeks, on rising, he had fainting spells, lasting from one to two minutes. His vision is dim but he never sees double. He states that he is deaf on the right side, and that this deafness came on soon after the onset of the severe headaches.

Present condition. There is distinct lateral nystagmus, and slight

drooping of the eye-lids. They fall to the level of the upper margin of the pupils. Left pupil slightly larger than the right. Both react sluggishly to light and accommodation. Slight internal strabismus of right eye. The associated movements of the eyeballs to the right are very much diminished. Movements of the eyeballs upward are much restricted and excite vertical nystagmus. Downward movements are normal. Double optic neuritis most intense on right side. Facial paralysis of the right side. Saliva dribbles constantly from the right side of his mouth. There seems to be some difficulty in deglutition. There is total deafness in right ear. Bone and aerial conduction are almost nil. The drum membranes are normal. Sense of smell and taste normal. There is no loss of muscular strength.

Reflexes. The patellar reflexes are lively, more so on right side. No foot-clonus. Superficial reflexes normal.

Sensation everywhere normal. The gait is unsteady and tottering, and the feet are spread wide apart. Rhomberg's symptom well marked. He falls toward his right side.

He was given large doses of potassium iodide together with inunctions of mercury, with considerable improvement. The incoordination improved, there was less general weakness, greater intelligence and considerable diminution of headache, less nystagmus and a more steady gait. May 6, 1896. Patient walked to my office, a distance of half a mile. He is much steadier, conversed more quickly, and answered questions intelligently. For the first time tremor in both hands was noticed. Optic neuritis seems less intense. No anæsthesia of face or mucous surfaces, but he complains of numbness in the distribution of the right trigeminal nerve. Reaction to degeneration exists in the distribution of the right facial nerve.

August 3, 1896. Patient is in every way worse. Staggering is so intense that he can hardly stand nor can he walk a step without falling. He complains of numbness and weakness in the left hand and leg. He now staggers to the left as easily as to the right. There is incomplete anæsthesia in the distribution of the right fifth nerve. The right cornea is anæsthetic and taste is diminished on right side of tongue. The tongue deviates toward the right and presents distinct fibrillations. The headache is intense, and he has repeated attacks of vertigo, at times, accompanied by loss of consciousness. There is considerable wasting of the facial muscles on the right side, also atrophy of the masseter and temporal muscles.

August 12, 1896. Patient died quite suddenly while I was out of town, and no autopsy was permitted.

The interest in this case centered in the diagnosis and probable location of the lesion. The general symptoms, such as severe and continuous headache, vertigo and double optic neuritis, were so pronounced, and long continued, that one could unhesitatingly diagnose a brain tumor. The location was in the cerebellum, because of the presence of the typical cerebellar gait,

the nystagmus, the involvement of the right auditory, facial abducens, hypoglossal and trigeminal nerves, together with the presence of ptosis and limited upward movements of both eyes. The latter symptoms were probably due to pressure on, or involvement of, the quadrigeminal bodies. The lesion was located in the right cerebellar hemisphere and median lobe, involving secondarily, through extension forward, the above mentioned cranial nerves, as well as the right motor and sensory tracts in the pons, and the corpora quadrigemina. It is interesting, that the optic neuritis was most marked on the side of the lesion. This has often been observed, but satisfactory explanation has not as yet been forthcoming.

The numbness and weakness of the left hand and leg were doubtless due to pressure of the growth against the right motor and sensory tract. The numbness followed by incomplete anaesthesia in the distribution of the right trigeminal nerve, together with complete anaesthesia of the cornea and the diminution of the sense of taste on the right side of the tongue, as well as the atrophy of the masseter muscles were due to the involvement by pressure of the right fifth nerve. The right sided afacial paralysis was of the peripheral type, the muscles innervated by that nerve showing distinct degenerative reactions, this defect, together with the paralysis of the right half of the tongue were due to implication of the root fibers of the facial and hypoglossal nerves. The complete deafness in the right ear was due to pressure and consequent destruction of the right auditory nerve. This seems certain because the drum membranes were normal and both the aerial and bone conduction was almost nil on the affected side. The incomplete ophthalmoplegia is best explained by the extension forward of the growth into the quadrigeminal bodies, interfering with the functioning of the nuclei of the oculi-motor nerves.

A tumor of the left cerebellar hemisphere and median lobe or worm, compressing the left side of the pons and medulla, the left facial, auditory, glossopharyngeal and hypoglossal nerves.

June 1, 1902. Mrs. S. C., aged 38. Seen in consultation with Dr. Sweet, of Petersburg, N. Y. Married and mother of five children. Father dead, cause unknown. Mother died of Bright's disease. Has six brothers and two sisters living and well. No history of insanity or nervous diseases in family. Has had measles, but no other illness, since childhood. Has had no miscarriages. Menstruation normal in amount, and without pain. Present illness began about two years ago, with weakness and dragging

of the left foot. Soon after, she noticed that objects would frequently fall from her left hand. Three months ago, a similar condition occurred in the right leg, followed by marked weakness and loss of power in the right hand and arm. She has never had convulsions, but has had, for a considerable time, paroxysms of difficulty in deglutition. Has had a great deal of dizziness and dull occipital headaches. Has constant roaring in both ears and occasional attacks of vomiting, projectile in character. Is confined in bed in horizontal position, has a slight build, flabby musculature, no œdema, pale mucous surfaces and a dingy complexion. Pupils are midwide and react to light and accommodation. Excursion of eyeballs normal. Lateral movements bring out a typical nystagmus. Visual fields not contracted. Double ptosis exists, the lids falling to the level of the upper quadrant of the cornea. Left nasolabial fold obliterated. Left side of mouth lower than the right, and saliva is constantly dribbling from it. The tongue is protruded straight, but shows fibrillary twitching, especially of left side, and, in one or two places, seems atrophied. Similar twitching exists in the lips and eyelids. Movements of left side of soft palate and pillars of fauces, limited. When patient attempts to grasp an object, with either hand, there occurs a coarse jerky intention tremor, of the type common to multiple sclerosis. She frequently spills liquids when attempting to drink. There is no loss of muscular sense in the upper extremities and she recognizes objects that are placed in her hands. The grasp of each hand is alike weak. All movements of the arms could be performed, in a slow manner. The muscles are flabby but show no distinct atrophy. The left foot is adducted, and the foot is in an equino-varus position. No wasting in the muscles of either leg. She could raise both legs from the level of the bed but was unable to sustain them for any length of time, then they would fall into a position of over extension. She is able to extend the feet on the legs. All movements of the right leg are much stronger than those of the left.

Reflexes. Both patellar reflexes exaggerated, but most marked on left side. Ankle-clonus distinct on left side, slight on right side. Plantar reflexes diminished. Babinski's phenomenon present on each side. Umbilical and epigastric reflexes normal. Triceps reflexes present. No wrist tendon reflexes. Control over bladder and rectum normal.

All forms of general sensation normal. No nerve or muscular tenderness. Speech slow and monotonous, not scanning. No aphasia. Mental condition normal.

Special senses. Sense of smell and taste normal. Patient is absolutely deaf in left ear, this deafness is recent in origin. Hearing normal on right side.

Patient died September 20, 1902. Post mortem confined to head. Distinct rigor mortis. Post mortem lividity of dependent parts. No marked muscular wasting. Pupils equal, contracted, and eye-balls are straight. Skull moderately thin. Dura non-adherent. Vessels of pia injected. Olfactory bulb and nerves somewhat flattened. Projecting from the ventral and inferior surface of the left cerebellar hemisphere and inferior worm, exists, an irregular quadrilateral shaped tumor,

resembling brain tissue. The consistency is firm and it measured three and three-quarters by three and three-quarters centimeters. This growth compressed, laterally, the inferior half of the pons and medulla oblongata, producing on the surface of these structures a distinct concavity. It also compressed and flattened the left facial and auditory nerves together with the hypoglossal and glossopharyngeal nerves.

The nystagmus, the slow, drawn-out speech, the coarse jerky intention tremor, the patient spilling liquids when attempting to drink, the tremor of the lips and tongue, and the paresis of the legs with exaggeration of the deep reflexes, constitute a group of symptoms which could be very well explained, by islets of sclerosis in the cerebellum medulla, and pons. The left sided deafness, facial paralysis and paralysis of the soft palate, the atrophy of the left side of the tongue, difficult deglutition, and the occipital headaches, could not, however be well explained by such a supposition, and my first diagnosis, that of an aberrant cerebellar type, of multiple sclerosis involving the cerebellum, pons and medulla, was set aside for a growth at the base, involving the pons and medulla on the left side compressing or destroying the left facial, auditory, glossopharyngeal and hypoglossal nerves, and compressing the motor tracts. The growth was not believed to be located in the cerebellum, although the nystagmus and dizzy spells, should have made me expect it to be so located. The diagnosis of a growth might have been made more certain, could an ophthalmoscopic examination been made, but owing to my carelessness, the instrument was forgotten. The microscopic study of the tumor shows it to be a glioma.

Tumor of the choroid plexus of the fourth ventricle, growing dorsally, and producing symptoms characteristic of a tumor of the median lobe of the cerebellum; distinct staggering toward the right side.

December 30, 1898. W. K., aged 10 years, German. Father living and well. Mother died of some stomach trouble, probably cancer. Has had measles, varicella, mumps and pertussis. No history of any nervous disease or insanity in family. Never received an injury to his head.

Present illness began about November 1, 1898, with the symptoms of la grippe, and severe occipital headache. Later the headache became general. He tired easily, and would have frequent dizzy spells. In December, he left school, because of the severe headache and his inability to remember his lessons. Soon after, his gait became affected and in order to walk he would have to support himself on a chair.

Present condition. Pupils widely dilated, equal, and respond very slightly to light and accommodation. Excursion of eyeballs normal. Slight lateral nystagmus. Double optic neuritis. No hemianopsia. Hearing normal in left ear, but is reduced in the right, because of a chronic otitis media.

Examination of eyes by Dr. F. A. Smith: Right eye—V- $\frac{2}{80}$, pupil large, 9 m. m. in diameter; reacts to light and accommodation; media clear; disc swollen 3 D, outline not discernible; veins enlarged; arteries normal; field of vision slightly diminished on temporal side. Left eye, V- $\frac{2}{80}$; pupils large, 9 m. m. in diameter; disc swollen 3 D; field of vision normal; the internal ocular muscles of both eyes are normal. No facial asymmetry. Tongue protrudes straight. Sense of taste and smell normal. Vocal cords move normal. Patient sways to the right side when he stands or attempts to walk. This is very marked when he walks backward. Rhombert's symptom not marked. Movements of upper extremities a little awkward, but otherwise normal. Sensation is everywhere normal.

Reflexes. Right patellar reflex slightly exaggerated. Left normal. No ankle-clonus. Superficial reflexes of both sides preserved and normal. Heart, lungs and urine normal.

February 1, 1899. Patient's condition is very much worse. Headaches very severe. There is rigidity of the neck and upper part of the spine. Scalp is very tender, over occipital and parietal regions, and on percussion, there is a distinct tympanitic note over both parietal bones. A few days ago, he had a dizzy spell, staggered forward, seemed dazed and said he could not see. During this attack the pupils became widely dilated, and there was an evanescent loss of consciousness. When he awakened, he was in a bewildered state and frequently asked where he was. He is able to walk only by supporting himself on chairs. He complains, also, that his feet are icy cold most of the time.

March 1, 1899. His breathing is irregular and labored. Has frequent attacks of hiccough and some difficulty in swallowing. Pulse is rapid and feeble.

Died, March 7, 1899, at 7 A. M. Autopsy, at 8:30 P. M. Pupils equal and widely dilated. Eyeballs slightly divergent. Glabella to occipital protuberance, 35.5 c. m.; circumference at zygomatic processes, 58 c. m. Skull cap, over lower temporal regions is very thin. In a few places over the vortex, it is as thin as paper. Vessels of pia distended. Convolutions flattened. Dura thinned, not adherent and normal. There is a very great increase of the subarachnoid fluid and the lateral and third ventricles are distended. The nerves at the base are perfectly free and normal in appearance. The medulla oblongata is pushed forward. On section, through the median lobe of the cerebellum, a tumor was discovered irregularly quadrilateral in shape, measured 3.5 c. m. anteroposteriorly, and 2.75 c. m. transversely. This tumor was very vascular and was located in the fourth ventricle, almost completely filling it. It took its origin from the choroid plexus. In its growth forward and upward, it pushed itself through the velum medullare posterior, compressed and grew into the inferior worm of the cerebellum. The tumor belonged to the endotheliomata, variety perithelioma. The general symptoms present in this case, were clearly those of an intra-cranial tumor, and the focal symptoms indicated the position of the tumor to be in the median lobe of the cerebellum, hence a diagnosis of a tumor of the cerebellum was made.

Tumors of the medulla oblongata owing to the close approximation of the motor and sensory tracts, and the nuclei and root fibers of the eighth, ninth, tenth and twelfth pairs of cranial nerves, together with centres of respiration, circulation and those controlling the vaso-motor nerves, create symptoms which are very characteristic, such as nerve deafness, paralysis with atrophy of the tongue, soft palate, muscles of pharynx, producing dysphagia, dysarthria, or paralysis of one or the other vocal cords. Of common occurrence are disturbed heart action, attacks of dyspnoea of Cheyne Stokes breathing, and polyuria. These symptoms are frequently accompanied by alternating paralysis of the extremities, with or without sensory disturbances or ataxia, and marked increase of the deep reflexes. Tumors of the fourth ventricle when compressing its floor are accompanied by very marked vaso-motor, cardiac and respiratory changes together with other bulbar symptoms. Not infrequently sudden death ensues from the sudden compression of the node vital of Flourens.

In this case none of the above mentioned symptoms were present, and the autopsy showed that the growth grew dorsally through the posterior medullary velum into the median lobe of the cerebellum, compressing and in part destroying it. It is remarkable, owing to the position and size of the tumor, that the important tracts and centres in the medulla were not early involved.

THE PATHOLOGY OF BRAIN TUMORS.

Read before the Medical Society of the County of Albany, January 11, 1905

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In the following paper I have endeavored to bring together in concise form the essential facts in the pathology of brain tumors. It is understood, no doubt, how impossible it is in a review of this kind, to discuss in detail all the various types and for this reason I have chosen to give more space to those tumors which seem to be of special pathological interest.

As brain tumors we interpret all those new growths within the cranial cavity, including cysts, gumma and tubercle. Haematoma and aneurism are not included although they may give

rise to symptoms of tumor. For convenience Brun's classification of brain tumors is used. He divides them into three classes:

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|---------------------|------------------|
| 1. True neoplasms | a. Primary. |
| | b. Secondary. |
| 2. Granulomata | a. Tubercle. |
| | b. Gumma. |
| 3. Parasitic tumors | a. Cysticercus. |
| | b. Echinococcus. |

As to the relative frequency with which these tumors occur in the brain, the statistics agree closely. There is, however, a marked difference in the order of frequency in adults and children as is shown in Starr's table. In the former sarcoma and glioma are the most frequent, whereas in the latter tubercle is the most common.

Of the true neoplasms the *Glioma* is the only one peculiar to the brain, unless an exception is made for those originating in the retina. In six hundred cases of brain tumor tabulated by Starr, glioma occurred ninety-one times. Males were affected more often than females, and they were located most frequently in the pons, medulla or cerebellum. In size glioma varies usually between three and ten centimeters in diameter, occasionally growing to be much larger. In appearance they closely resemble brain tissue conforming in outline to the part in which they grow. Many of the so-called hypertrophies of the brain are in reality gliomata. They are greyish or greyish red in color, depending upon the amount of blood in them, and soft, although an increased amount of connective tissue makes the consistency firmer. No sharp line of demarcation separates the tumor from the surrounding brain tissue, as its growth is infiltrating in character, and for this reason normal nerve fibers and ganglion cells are frequently included in the tumor. When these elements are very numerous the tumor is termed a neuroglioma or neuroglioma ganglionaire. Glioma originates from the glia cells or ependymal cells supported by a stroma of connective tissue. These elements are subject to wide variation and the very cellular forms are often confused with sarcoma. For these cellular forms resembling sarcoma Borst has suggested the name glioma-sarcomatodes.

Microscopically glioma is characterized by the glia cells which have relatively large nuclei and a small amount of protoplasm

extending outward from the borders of the cells in the form of fine processes or fibrils, often giving a star-shaped appearance to the cells (astrocytes). Most of the fibrils arise from the glia cells, according to Borst, with either a polar or radial arrangement. Some of the fibrils, however, originate from the connective tissue stroma. In the cortex the fibrils are short, in the medulla long. The vessels in a glioma may be very numerous and sometimes give an angiomatous character to the tumor, to which the term glioma telangiectodes is given. Hemorrhages in gliomata are not infrequent and may lead to areas of discoloration or softening. When the hemorrhage is extensive it may mask the presence of the tumor completely. Degenerations are common, such as softening, cyst formation or fatty metamorphosis. Abscess has occurred but is generally associated with accompanying inflammatory conditions. Oedema often gives rise to the appearance of myxomatous degeneration. The occasional presence of spaces lined by cylindrical or ciliated epithelium is explained as being due to a regressive metamorphosis into ependymal cells or misplaced epithelium from the ventricles. Glioma is a benign form of tumor, but Stroebe quotes cases of undoubted regionary metastases. Virchow claimed that they originated from the glia tissue and suggested their congenital development. v. Rindfleisch believed that they arose from embryonic anlage. The frequency of developmental errors, such as spina bifida with glioma in children and the growth of gliomatous tissue in syringomyelia at the line of closure of the medullary canal lend support to this view.

Sarcoma in Starr's table occurred with greater frequency than glioma; of six hundred cases one hundred and twenty were sarcoma, eighty-six in adults and thirty-four in children. In the former the cortex was affected most frequently, in the latter the cerebellum.

The growth starts from the cranial bones or meninges, less often from the connective tissue surrounding the blood vessels in the brain substance. From the meninges it forms a flat or globular tumor, and from the dura may take a fungus-like form, fungus durae matris. The size generally corresponds to that given for glioma, although exceptionally it reaches enormous dimensions and may occupy an entire hemisphere. The consistency depends upon the character of the sarcoma, the fibrous form is hard, the round cell form soft. Calcification or ossifica-

tion in a sarcoma often occurs. All the known forms of sarcoma occur in the brain, namely, large and small spindle or round cells, giant cell and melanotic sarcoma. It is usually of whitish or greyish color modified by degenerations and hemorrhage.

To tumors having a very cellular structure and containing gliomatous tissue has been given the name glio-sarcoma. In the majority of the cases so named, however, the tumor belonged to either the one or the other forms. A mixed tumor of ectodermal (gliomatous) or mesodermal (sarcomatous) origin certainly does not occur (Oppenheim). The relation of sarcoma to the surrounding brain tissue is more clearly defined than in glioma. It is less infiltrating in its growth and can usually be separated out of its nest in the brain without difficulty. Its effect therefore upon the brain tissue is due to expansion rather than to infiltration. The result of the expansion is atrophy and compression which may be extreme without causing loss of function but when long continued leads to softening. At times sarcoma shows some infiltrating character especially when it springs from the walls of the blood vessels or extends along them. In these tumors it is not unusual to find nerve fibers, neuroglia or ganglion cells inclosed in the periphery of the growth. Of the mixed forms fibro- and alveolar sarcoma have been described in the brain. The latter is characterized by the arrangement of the cells in the form of alveolae. Fatty, myxomatous and cystic degenerations are common, as is also hemorrhage. Cases of sarcoma cerebri secondary to sarcoma elsewhere in the body are not common; Bruns has seen only two such cases.

Fibroma is one of the rarest types of brain tumor, originating in most instances from the periosteum or dura and forming hard globular masses of small dimensions. Occasionally they reach a larger size, as in the one removed by Keen, which measured $7\frac{1}{4}$ inches in diameter. They are located generally on the base of the brain and in the region of the cerebellum. They are sometimes cystic.

Osteoma is only exceptionally found in the brain, more often in the meninges, falx cerebri or tentorium and as exostoses on the internal surface of the cranium. Virchow mentions an osteoma the size of a cherry situated in the middle lobe of the left hemisphere. Calcification or ossification as a result of an old encephalitis or as a secondary change in brain tumors is not

uncommon. Baelz describes an enchondroma originating from the circumference of the occipital foramen.

Adenoma is a form of brain tumor limited to the glandular structures, the hypophysis and epiphysis cerebri, and corresponds to a hyperplasia of the glandular elements. They rarely reach a size larger than a walnut, although Weigert described one as large as a hen's egg which caused erosion of the sella turcica. The association between acromegaly and tumors of the hypophysis may be mentioned in passing. These cases are relatively frequent and are supposed to be due to an increase in the internal secretion in the gland.

Cholesteatoma is the name given by Johannes Müller to a pearly white glistening tumor occurring in the pia mater and choroid plexus. Considerable confusion has existed in regard to the histogenesis of these tumors, opinions being about equally divided between epithelium and endothelium. More recently Boestrom in studying a series of cholesteatomata has been able to demonstrate epidermoidal tissue at some point in their walls. The tumors microscopically are surrounded by a thin connective tissue membrane with papillæ, upon the inner surface of which the epidermal tissue is found, with basal cells of characteristic shape, a stratum corneum, keratohyalin, droplets of fat, probably eleidin and less frequently hair. The central portion of the tumor is made up of cholesterin crystals and cornified epithelial cells. The masses of cornified cells, closely pressed together, refract the light and give characteristic appearance to the tumor. The tumor is always supposed to be single and develops usually on the base of the brain in exactly the same locations that dermoids are found. For their development it is not alone necessary for epidermal cells to be inclosed but they must be implanted upon a vascular area. Developmental errors in the cranium are oftentimes found near the site of these tumors. They sometimes produce symptoms of tumor.

Dermoids are exceedingly rare and may be divided into two groups, dural and pial. In the former the pia mater is always interposed between the tumor and the brain. They develop in the median line on the tentorium or torcular Herophili. The pial dermoids develop only in the anterior or posterior cerebral vesicles, in the region of the olfactory lobe and the corpora candicantia or on the medulla and pons. They are found most often in the second and fourth decades, but have been found in

the foetus. The inclosed cells develop into skin with its attributes. The amount of vascular supply is supposed to exert an influence upon the development of the implantation; when it is large a dermoid develops, when small an epidermoid.

Teratoma developing in the brain is of even rarer occurrence than dermoids. They present the same structure as teratomata in other portions of the body.

Endothelium. In this type of brain tumor, as the name implies, the growth originates from the endothelial cells which line the blood and lymph channels and the pia mater. In morphology the cells resemble epithelial cells closely and their histogenesis has been much discussed and as yet is still undecided. Opinions have been divided as to whether they are hypoblastic or mesoblastic. In full development endothelium seems to be more closely related to connective tissue than to epithelium. In the blood vessels of the brain are found also the so-called perithelial cells which are situated outside the adventitia and of flat cuboidal or columnar shape. The perithelial cells are classed as a form of endothelium. From these cells of varying morphology then the endothelial tumors arise and form tumors which simulate carcinoma or sarcoma in appearance. In an endothelioma the cells are arranged in strings or columns of cells, often with a lumen representing a blood or lymph channel and at the periphery gradually passing into their normal endothelial linings. The amount of connective tissue stroma influences markedly their structure and appearance, when in large amount it may form a fibro-endothelioma. In the more cellular types the endothelial cells may assume an alveolar arrangement and the presence of secretion in the alveolæ or in the cells themselves in the form of droplets may readily cause confusion with adenocarcinoma or alveolar sarcoma. Mucoid, hyaline or myxomatous degenerations are common and in some cases the hyalin takes the form of cartilage. Whether it is in reality cartilage or not is a question, although it has been so interpreted by Broelletur.

Cylindroma, a variety of endothelioma, so named by Billroth, because in fresh teased preparations particularly, cylinders, balls or globules of hyaline were found shows microscopically long narrow strings of cells surrounded by a large amount of hyalin substance in the form of cylinders or globules. A cylindroma may develop from any of the forms of endothelioma by the formation of hyalin either by degeneration or secretion.

Endothelioma usually forms a single tumor, exceptionally multiple tumors; they are usually small in size and rarely cause symptoms. Their invasive power is small and while included in the group of malignant tumors they are much less so than carcinoma or sarcoma.

As *Psammoma* are classed those tumors of frequent occurrence in the brain which are characterized by the presence of calcareous granules in them and which give the sensation when cut into as though sand were present, in fact they are sometimes called sand tumors. They form white globular and firm growths and are located on the dura or pia mater or in the choroid plexus. Their finer structure shows the fibrous connective in large amount, in the meshes are strings or columns of cells probably of endothelial origin. They usually show hyaline degeneration and when the cells have a concentric arrangement, as is frequently the case, hyaline and calcareous degeneration in them give rise to typical sand granules. The variety in the shape of the sand granules speaks for a varied genesis and they are also formed by hyaline and calcareous degeneration of the blood vessels and fibrous tissue. The term psammoma has also been applied to tumors elsewhere and of different nature in which these calcareous granules have been found. Thoma speaks of a psammoma-fibroma and psammoma-carcinoma. Borst does not think this is proper inasmuch as the calcareous granules are purely by-products and as such may occur in any tumor. Psammomata are usually of small size and rarely cause symptoms.

Carcinoma. This form of brain tumor may be either primary or secondary, the latter is more frequent. Primary carcinoma originates in the brain from aberrant epithelial cells (Ziegler) or from cells in the lateral ventricles. Metastatic carcinomas form multiple masses on the cortex, pia, or dura mater and are soft, vascular, of mucous or gelatinous character and often times cystic. On the inner surface of the dura they form flat growths causing impairment of the brain functions principally by pressure. In point of frequency, carcinoma is third in Starr's table of 600 cases, having occurred 43 times, 33 in adults and 10 in individuals under 20 years.

Tubercle is a very common tumor, especially in children. In 100 cases of Hale White it occurred 45 times, in Starr's 300 cases in children 152 were tubercle. Henoch reports them as common between nine months and two years. Demme has reported a

case of cerebral tubercle in a child twenty-three days old. They are found most often on the cerebellum and pons due probably to the frequency of tuberculosis in the posterior cervical lymphatic glands (Bruns). In size they vary between a pea and a hazelnut and are frequently multiple. They originate from the meninges or from the walls of blood vessels within the brain substance and form round nodular masses, greyish yellow in color.

The center is caseous and in the periphery miliary tubercles are usually found of characteristic histological structure. The periphery is sharply defined from the surrounding brain tissue and can be easily separated and removed from it. The brain tissue at the circumference of the tumor undergoes softening early, due to the inflammatory character of the tumor.

The tubercle is made up of a conglomeration of many tubercles, and this together with their frequent multiplicity renders the name solitary tubercle unsuitable. Schmaus suggests the use of the name conglomerate tubercle. Tubercle cannot exist long without undergoing caseation, later calcification, scar or cyst formation, less often abscess may develop. There is a tendency for miliary tubercles to develop about the circumference of conglomerate tubercles, in fact the majority of these cases terminate in a tuberculous meningitis.

Gumma. The frequency with which gumma of the brain occurs is difficult to estimate because so few of the cases come to autopsy. It is an affection of adults and develops usually in the meninges which become adherent to one another because of a syphilitic meningitis in the neighborhood of the gumma. By compression gumma can give rise to symptoms of tumor. Gumma is usually smaller in size than tubercle, of a yellowish white color, with the central portion nearly always caseous, although not entirely so. The periphery is formed of granulation tissue and this extends also into the central caseous portion. In the periphery arterio-sclerotic vessels are found.

Under cysts the most frequent are of parasitic nature, due to the echinococcus and cysticercus cellulosæ. This form of cyst, however, is hardly ever met with in this country.

Of the other cysts, mention has already been made of cystic formations in tumors. Of more interest are those simple cysts which develop in the neighborhood of gliomata. Their origin is not explained but their presence often leads to confusion, as the cyst may be assumed to be the cause of the symptoms

and so mask the presence of the tumor. Gliomatous growth is sometimes found in the walls of these cysts, only a small rim of tumor remaining undegenerated.

As independent simple cysts are portions of the ventricles whose walls for some obscure reason become adherent thus separating a portion of the ventricle to form a cyst.

THE SURGICAL TREATMENT OF TUMORS OF THE BRAIN.

Read before the Medical Society of the County of Albany, January 11, 1905

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Only a few years have elapsed since it could truthfully be said that the medical man's interest in a case of tumor of the brain ceased with the diagnosis. It has long been a well established fact that with the exception of those of syphilitic character medical treatment had practically no curative effect upon tumors of the brain and only infrequently were the symptoms in any way alleviated.

Wernicke, in 1881, was the first to lay down certain definite indications for the surgical treatment of tumors of the brain. This was followed in 1884 by the report by Bennet, Ferrier and Godlee of a case in which a tumor of the motor region diagnosed upon the basis of the cerebral symptoms was correctly localized and successfully removed. This was followed in succeeding years by the work of Horsley, MacEwen, Keen, Weir, Birdsall and others. Although Germany may be said to have been the birthplace of brain surgery most of the credit for its development and the demonstration of its practicability belongs to English and American surgeons. It is only within the past few years that the work of von Bergmann and Krause have stimulated German surgeons to new advances in this difficult and uncertain department of surgery. To Victor Horsley more than any one else is due the credit for the great advance in our knowledge of cerebral localization, which has made possible the brilliant operative results achieved by MacEwen, Keen, Krause and others.

Statistics relating to the results of the surgery of brain tumors are decidedly uncertain, and to a considerable extent untrustworthy. Allen Starr in 1893 collected ninety-seven cases of tumor of the brain treated surgically. Of this number forty-six per cent. were regarded as recoveries. This percentage is undoubtedly far too high in the stricter sense of the word recovery. Starr applied this term to all cases in which the patient recovered from the operation and for a longer or shorter period of time showed more or less improvement in the symptoms. It is, however, hardly fair to regard all of the cases as really cured. It must further be borne in mind that the tendency always is to report the more favorable results and to keep silent about the unfavorable ones.

Bergmann collected one hundred and sixteen cases of diagnosed tumors of the brain which were removed at operation. Of these eighty-seven occupied the central convolutions, twelve the cerebellum, ten the frontal lobes, four the temporal lobes and three the occipital lobes. Twenty-nine, or twenty-five per cent., died as a direct result of the operation. Of the remaining eighty-seven, sixty were reported as recovered. In thirty-two of these sixty cases the term recovered applied only to the immediate results of the operation and no statements were made about the subsequent histories of the cases. In addition to these successful cases, there have been a great many in which at operation the tumor was not found or the conditions were such that the operation could not be completed. Bergmann has collected one hundred and fifty-seven such cases in sixteen of which there was no tumor of the brain at all, while in eighty-nine the tumors occupied some other position than that diagnosed. In forty-three of the cases the tumor was too extensive to allow of a removal. The mortality of operation in these one hundred and fifty-seven cases was forty-seven and seven-tenths per cent. The mortality of removal of tumors of the motor region according to Bergmann is nineteen per cent; of the frontal lobes forty per cent., and of the cerebellum fifty per cent.

Oppenheim collected fifty cases of tumor of the brain successfully operated upon, and in forty-three of these the tumor occupied the motor area. Of eighty-four cases in which the tumor was found where it had been previously located, in sixty-four this was the motor area, while of forty cases in which the tumor was not found at operation in only five was it located in the motor area.

Such statistics as these have convinced neurologists and surgeons that tumors of the motor region belong to the domain of surgery. This view is supported by two important facts, (1) that the cerebral cortex is so situated that operative attacks upon it are not especially difficult or dangerous, and (2) that the symptomatology of disturbances of the motor area is relatively distinct and characteristic.

The removal of tumors of the motor region becomes easier and less dangerous the nearer the tumor is situated to the surface of the brain and the smaller and more circumscribed it is. Even large tumors can be successfully removed as demonstrated by a case reported by von Bramann, who removed a tumor weighing two hundred and eighty grams, the size of which corresponded to about one-third of the cerebral hemisphere. Even diffuse tumors of the brain have been successfully removed.

In addition to tumors of the cerebral cortex, those of certain other regions of the brain are entitled to consideration surgically, and in some instances to operative procedure. These operations are, as a rule, extremely difficult and attended with a great deal of danger. On the other hand, without surgical intervention the patient's condition is hopeless and the suffering entailed by the tumor almost indescribable. Morphine in the largest doses frequently has little or no effect upon the pain, and for this reason, if for no other, an operation is often sought and is entirely justifiable. Of this character are tumors of the cerebellum and tumors of the posterior surface of the petrous portion of the temporal bone, known as neuromata of the acoustic nerve. These are frequently of benign character, fibromata or fibrosarcomata in nature, encapsulated and easily shelled out. Occasionally they are bilateral. Situated in the angle between the cerebellum, medulla and pons, they cause pressure upon these structures and more or less characteristic symptoms. The tumors of the brain especially suited for removal are sarcoma, glioma, gliosarcoma, fibroma and cysts, including those of the echinnococcus variety. The gliomata are especially apt to diffusely infiltrate the brain tissue, but even this does not preclude the possibility of a successful removal. To this list of tumors should be added conglomerate tubercle, circumscribed syphiloma and circumscribed encephalitis. Tubercle has usually been regarded as a form of brain tumor in which surgical treatment was contra-indicated because of its rarity as an isolated focus, its occasional tendency to spontaneous recovery and its tendency to localize

itself in the more inaccessible portions of the brain, as the cerebellum and brain stem. That there is no proper justification for the exclusion of tubercle from tumors of the brain amenable to surgical treatment, is demonstrated by the cases of MacEwen, Horsley, Vierordt and others in which the tubercle has been successfully enucleated. Bergmann has collected twelve cases of brain tubercle treated by operation. Seven involved the cerebral convolutions and five the cerebellum. Of the seven which occupied the cerebrum three were cured, two died from the operation and two from an extension of the tuberculosis. In the five cases of tubercle of the cerebellum all died, three immediately after operation.

Gummata of the brain in the great majority of instances can be excluded from surgical treatment. Cases do occur, however, in which the specific treatment has little or no effect upon the syphilitic tumor, and in such cases an operation is justifiable. Bergmann has collected eleven cases in which gummata of the brain were excised, five of these cases recovered. In one case further specific treatment was necessary to effect a cure, and two cases were somewhat improved.

MacEwen and Bramwell are of the opinion that the syphilitic scars remaining after a cortical syphilis should be excised when they cause symptoms.

Circumscribed encephalitis is, in ninety per cent. of the cases, of traumatic origin. The exposure of such a focus and the removal of the softened material may prevent a further extension of the process in addition to affording relief from the cerebral pressure.

General experience has shown that of one hundred tumors of the brain, only about eight will fulfill the indications for direct surgical treatment, and that of these at the most only five or six can be successfully operated upon. White found that of one hundred brain tumors studied at autopsy only nine could have been removed by operation. Seydel, in the Munich Pathological Institute, found only three in one hundred cases of brain tumor coming to autopsy that could have been removed, while in one hundred cases of brain tumor studied pathologically at the Heidelberg clinic, Beck found that sixteen could have been removed. Openheim personally studied twenty-three cases of brain tumor upon which autopsies were performed, and in only one could an operation have been successfully performed. Statistics clearly

show that in most of the cases successfully operated upon the tumor was situated in the motor area.

Tumors situated deep in the hemispheres in the region of the central ganglia, the ventricles or the brain stem are naturally to be excluded from surgical attack.

Oppenheim, as late as 1897, regarded tumors of the cerebellum as practically inoperable, although MacEwen had prior to that time successfully extirpated a tumor from the cerebellum and Maunsell had successfully operated upon a cyst of that organ. It has been found to be extremely difficult to determine from the clinical symptoms just what portion of the cerebellum may be occupied by a tumor. In sixteen cases of tumors of the cerebellum collected from the literature the tumor was correctly located in only seven. There are, however, on record a considerable number of cases in which both solid tumors and cysts have been successfully removed from the cerebellum, and tumors of this organ are certainly to be regarded as within the scope of modern surgical treatment. The anatomical difficulties of such operations are great because of the proximity of large sinuses and the difficulty of securing adequate exposure of the cerebellum. This latter difficulty has been, in a measure, overcome by the formation of a large bone flap which reaches from one mastoid process to the other and extends upward a short distance above the external occipital protuberance. In this way all the lobes of the cerebellum can be exposed and examined. Krause has demonstrated that it is feasible to incise the cerebellar tissue in order to remove tumors from the deeper parts of the organ, when they may not be demonstrable by inspection, palpation or puncture. The preservation of the bone flap is not necessary in these cases, because of the thick covering afforded by the overlying soft tissues.

In all operations for the removal of brain tumors, the exposure of the brain should be extensive. This end is best attained by the employment of the so-called osteoplastic flap, by means of which an entire hemisphere can be exposed and satisfactorily examined and the flap then replaced. If the brain is exposed and the tumor is not found as expected, the surrounding brain tissue should be carefully examined, and if necessary the opening in the skull enlarged. The subcortical regions should also be explored by means of palpation and puncture. Electrical stimulation is frequently of the greatest assistance in determining the

exact locality of the brain exposed, if this be the motor area. The greatest caution should be exercised in all these manipulations and examinations in order that the brain tissue may be injured as little as possible. In certain instances where the patient's condition is bad, it may be advisable to do the operation in two stages, first to form the osteoplastic flap and then a few days later to excise the tumor. Severe and possibly fatal shock may be in this way avoided. If the tumor should be found to be very large or to diffusely involve the surrounding brain tissue so that a radical removal is out of the question, a partial removal is certainly indicated, for in this way a great deal of temporary relief may be secured for the patient. It has been abundantly demonstrated that after the extirpation of a brain tumor the severe general symptoms abate and usually disappear while, the paralytic symptoms produced by the loss of brain tissue often persist to a greater or lesser extent. Occasionally there is also some persistence of the irritative phenomena.

An important question which not infrequently has to be settled is as to whether in cases in which a tumor of the brain cannot be located or is so situated as to make its removal impossible, an operation is advisable. Victor Horsley long ago advised the removal of an extensive portion of the skull in cases of inoperable brain tumor in order to relieve the symptoms of cerebral pressure. There are on record a considerable number of cases which demonstrate that the simple removal of a portion of the skull with incision of the dura has relieved both the subjective and objective symptoms for a considerable period. Sanger, in 1902, reported eleven cases treated in this manner, ten of which experienced decided relief, the headache, vomiting and convulsions ceased or were ameliorated, the optic neuritis receded and the vision improved. Such an operation would appear to be indicated (1) when the subjective discomfort of the patient is very great and cannot be relieved in any other way, and (2) when the disturbance of vision is rapidly progressive and there is great danger of blindness. Care should be exercised to select a site for the trepanation in which the prolapsed brain may not contain a region of great functional importance. As palliative measures puncture of the ventricle and spinal puncture have been proposed, but the former procedure is hardly to be advised, because the benefit to be derived if any is only transitory and the danger is almost as great as from trepanation.

Some observers have reported beneficial effects after spinal puncture, but as a rule this gives but little relief. Stadelmann has advanced the view that the communication between the subarachnoid space and the ventricles of the brain is not always a free one, so that the fluid within the ventricles may not be influenced in the least by spinal puncture.

In conclusion, a warning should be raised against undue haste in the diagnosis and in the determination to operate, and great care should be taken to prove as conclusively as possible that a tumor really exists, and furthermore to determine with all possible certainty and accuracy its location. When all the indications have been fulfilled, when syphilis can be excluded, and when internal medication has proven of no avail although continued for some time, then it is proper for the surgeons' aid to be invoked. The surgeon should rather advise than insist upon an operation, because at best the chances are not especially good.

NEW YORK STATE MEDICAL LIBRARY.

FROM THE ANNUAL REPORT PRESENTED JANUARY 4, 1905,

By MELVIL DEWEY,

Director of the State Library.

Established May 21, 1891. Ada Bunnell, B. L. S., Sub-librarian.

YEARS	VOLUMES			SUBJECT CARDS	
	Total	Added	Cost	Total	Added
1891.....	2,740	86	\$28 18	181	79
1892.....	2,858	118	33 39	314	133
1893.....	5,108	2,250	103 64	1,169	855
1894.....	5,522	414	79 25	3,486	2,317
1895.....	5,740	218	57 98	4,060	574
1896.....	6,856	1,116	2,124 77	4,806	746
1897.....	7,628	772	1,131 23	5,160	354
1898.....	8,421	793	452 28	5,620	460
1899.....	9,279	858	269 95	5,933	313
1900.....	10,332	1,053	203 58	6,449	516
1901.....	10,712	1,111	1,401 05	6,739	290
1902.....	11,764	1,052	736 61	8,002	a 263
1903.....	12,771	1,007	335 65	8,695	693
1904.....	14,199	1,428	743 69	9,097	402

a Increase largely due to insertion of cards for 50 pamphlet volumes of Latin medical theses.

These statistics represent material classed in 610 (medicine). Other related material of importance is to be found in 132 (mental diseases), 362 (hospitals), 540 (chemistry), 590 (animal physiology), 926.1 (biography of physicians), etc.

The medical library has grown from 2,740 volumes and 181 subject cards in 1891 to 14,199 volumes and 9,097 subject cards in 1904. It also has about 7,250 pamphlets and is receiving regularly 317 serials. In 1904, as shown on table T, p. oo, \$2,233.04 or \$396.12 more than in 1903, was spent for the medical library; the deficit, with our appropriation of \$2,000, being made up from the general library appropriation. \$523.56 as against \$429.11 in 1903 was for books, \$1,171.60 against \$861.02 in 1903 was for serials, and \$537.88 against \$506.29 in 1903 was for binding. The total for serials and binding, \$1,709.48, if paid entirely from the medical appropriation, would leave less than \$300 for books and for filling up sets of periodicals. This amount is obviously totally inadequate, yet, with the constantly increasing output of important serial publications and the consequently necessary increased cost of binding, the sum for books must inevitably be reduced unless our appropriation is enlarged.

The backbone of a medical library is its periodicals, with sets complete from the first issue. Our weakness in this respect makes it constantly necessary to send to the Surgeon-General's library at Washington, paying express both ways on heavy bound periodicals, a great tax specially on our younger physicians earnestly desirous of making themselves competent to fight disease and build up the general health of the community. The number of medical periodicals published is something over 1,200 and any well equipped medical library should take at least five or six hundred, which with the new books to be added and the filling up of sets of periodicals would require more than double the appropriation we now receive.

The use of the library is increasing and the small reading room is frequently overtaxed. Additional shelving for 400 volumes was provided in the reading room by turning the deep doorway leading to 34A into an alcove and filling it with shelves. Periodicals for the past five years are arranged in alphabetic order in the alcove in 32A, an arrangement of great convenience.

The library council, consisting of Drs. Albert Vander Veer, Samuel B. Ward, Henry Hun, George E. Gorham and Arthur

W. Elting, met regularly during the year, selecting books and advising on the general policy of the library.

The *Albany Medical Annals* publishes regularly in a State medical library department lists of new books, periodicals and other items of interest.

Gifts. Six hundred and ninety-five volumes were given in 1904. Besides gifts of books, serials and pamphlets, from authors, publishers and medical societies, we received valuable additions from Drs. Hun, Ward, Vander Veer, Van Rensselaer and Pearce, all of Albany. Of special value were the volumes of bound periodicals from Dr. Hun, *i. e.*:

Archiv für Psychiatrie und Nervenkrankheiten. v. 1-35

Archives de neurologie. v. 1-26

Berliner Klinik. 1889-1900

Centralblatt für allgemeine Gesundheitspflege. v. 1-10

Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. v. 1-28

Centralblatt für die medicinischen Wissenschaften. v. 1-38

Centralblatt für Physiologie. v. 1-5

Jahrbucher für Psychiatrie. v. 1-16

Journal of Nervous and Mental Diseases. 1886-96

Klinische Zeit und Streitfragen. 1887-95

Le progrès médical. 1885-90

Psychiatrisches Centralblatt. v. 1-8

A box from the exchange department of the Association of Medical Librarians, containing both bound and unbound numbers of periodicals, helped to complete some of our sets.

Physicians are earnestly requested to send gifts of books, periodicals or reprints. Even single volumes or odd numbers of periodicals of little value to the owner may help to complete valuable sets.

Loans. Books are lent to any registered physician in this State, but are delivered only on personal application or on a written order, by which full responsibility for books so delivered is assumed.

Books are lent outside Albany, provided:

1 That such precautions be taken in packing, as to guard against any probability of injury in transportation.

2 That the medical library shall not pay postage or express either way.

Library of Surgeon-General's Office. Physicians wishing books from this national medical library may obtain them for two weeks through this library by paying express charges both ways.

Claims for a State Medical Library. Medicine has all the claim of any other subject, the claim of one of the greatest departments of human learning to have its results readily available, but it has the peculiar claim unequalled by every other subject, that it is of direct concern to every citizen. The State Medical Library is available to every registered physician in the State. Any practitioner is liable at any time to have a case so serious that he dare not leave it, concerning the treatment of which he needs to consult books or recent articles not at hand. He can get these from the State Medical Library, and as a result may save a life in the family of any citizen. There is a stronger case for a well supported medical library than for any other subject whatever.

George M. Gould in *Medical Libraries*, May, 1898, 1; 15: Surely a profound and magnificent role in the regeneration of the world is accorded and awaits scientific medicine. Just as certainly scientific medicine depends on a rigid and thorough-going literary systematization of the results reached by the world's million individual workers. In no branch of human endeavor is there such instant practical application to the needs of humanity as is ours, and in none may the findings of a solitary worker in Asia, Europe or America, be immediately needed by any other physician in a hamlet or hospital continental distances away. I look forward to such an organization of the literary records of medicine that a puzzled worker in any part of the civilized world shall in an hour be able to gain a knowledge pertaining to a subject of the experience of every other man in the world. It seems to me strange beyond all belief in the stage of civilization which we have reached, when trades-unions of a thousand kinds are local, national and international, when every place of human activity has recognized that the *sine qua non* of progress is organization and intercommunication, that the pricelessly precious results of medical knowledge should be given over to the rapine of commercialism, and to that barbarism of unorganization in which our medical libraries at present do not flourish. In saved lives and spared expense, our state and national governments would make money by devoting millions of dollars to establishing medical libraries in every city and village of the land.

George M. Gould in the *Philadelphia Medical Journal*, July 30, 1898, 2: 238. The physician is devotedly unselfishly, heroically working for the community. There is no such unselfish, charitable, and overworked laborer in the whole list as he. And, as a rule, you are mighty ignorant of the fact, and ungrateful to the man. But he pays his taxes for the library as well as the rest, and has just as perfect a right to have the community buy and care for his books as have the readers of "All for Her

Sake," "Reginald's Wooing, or the Headless Horseman". The medical alcove would show recognition of the work of the physician, and, more than this, recognition of the duties and departments of which he is humanity's chief officer. Your readers all know of the great slayers and cursers of mankind; how little they know of the helpers and savers! They know their Napoleons and Zolas. Do they know as well their Pasteurs and Jenners? Do they know of the work in saving thousands of lives, and adding thousands of years to the life of a generation, done, for example, by a single physician of Buffalo? Do they know *how* these lives were spared, and the years gained? Perhaps even hardly one of you knows that it was by many years of warfare persisted in every day in the face of hatred, opposition, lawsuits, bribery, and ignorant infamy, warfare against dirty and diseased milk, against filth in houses, in cesspools, slums, ash-pits, cellars, backyards, in stables, in drains, and sewers, against disease in water supplies, in meat and food of all kinds, warfare against dens of infamy, against overcrowding, laziness, city rings and bosses, and all the beloved vices of men and women. Doubtless, the lives of several hundred babies in this city alone have been saved during the last year by partially preventing the sale of long rubber-tube nursing-bottles, and yet every other mother and every second drug-store has broken the law, and laughed at their crimes.

I think the medical alcove in your libraries may directly and indirectly help to awaken the resident community — the poor, silly community, hypnotized by ignorance and befouled with quackery — to some realizing sense of its duty to itself and of its crimes to the medical profession. For at last, it is only self-interest, if the people but knew it. Half of the disease and death in the world, the disease and death that load down the tax-bill and burden the community with suffering and expense — a full half at least, is preventable. Wherever is this preventable half or more, there has been its casual moral or hygienic sin. The medical library, active, before the eyes of all, means a profession capable of coping with disease and preventing it, and means an awakening knowledge on the part of all that individual and communal guilt must stop breeding the ills with which humanity has groaned since the days of savagery.

The public library should be the intellectual and moral center of the life of the community, and its shelves should clearly show how far the people have traveled in scientific and ethical progress. The medical department in the public library, and the well-organized library in every city, village or town of the land, will be the proof that civilization has at last conquered barbarism, that health and long life are recognized as the first of all human duties, and that disease, filth, and the high death-rate — those history-long curses of humanity — have been met and conquered.

Perhaps you think it strange I urge this work upon you, who are generously willing to undertake it, while the most evident fact is that the medical profession is the sinner, indifferent, lethargic and lazy. I confess with shame that this is true. We have not improved the opportunities you have offered us, and are most ashamed of ourselves. I am appealing to you to help make us more ashamed and begging you to go home, and by tireless labor arouse medical men, trustees, etc., to a realizing sense of

their duty and their opportunity. We are not wholly without excuse. We have been very busy curing our sick, and you have lavished your love most prodigally upon your pet quacks. You also have some sins to atone for. Do, then, let your atonement be shown in this way.

It may be said by some quibbler that the medical alcove will lead to an absurd multiplication of departments, the lawyers', the assyriologists', etc., etc., but this is all theoretic stuff and nonsense. In proportion to the need and service may the allotment be made. "Children should not see medical books and journals?" Librarians and their assistants are neither children nor fools, and they know how to make and to enforce proper rules.

Shall the thousand lay-folk buy and care for the books of the half-dozen physicians? Most certainly, yes. What proportion of your readers last year read the best history of civilization, the best ornithologic or botanic treatise? The whole community is divisible into a hundred classes of readers, and no one branch of knowledge is psychologically or ethically separable from all others. What proportion of pages in the *British Encyclopedia* is devoted to subjects medical or physiologic? What work is so basic and primal as preventive and curative medicine in the well-being of the community? The community owes a debt to the profession that can be paid in no better way than in the just and proper manner of purchasing and caring for his professional literature.

George M. Gould in *Philadelphia Medical Journal*, July 30, 1898, 2: 237. The result of having no library at all is a terrible handicap for the profession, placing the small city man or the rural practitioner at such a disadvantage with the big city men that he rarely reads papers at medical gatherings or contributes them to journals. Almost worse than this, it forces him and all his competitors to buy each of them one copy of all good books, when one book in a common book-house would do for consultation by all the practitioners of the place or the neighborhood. This tax on the physician's slender income is often almost unendurable for those who, buying books, submit to it, whilst those who do not buy the books, drop into a boorish lethargy of intellectual and professional life and you, their patients, suffer or die for their sin.

C. D. Spivak in *Medical Libraries*, Sept.-Oct., 1898, V. 1, supplement p. 2. The utilization of medical literature requires that all the medical records of the past and the present, from every clime and zone, should be brought together under one roof. Surely no one man can ever aspire to build up such an edifice. Some of the more fortunate may be able to buy all the books they wish to read, but no individual can afford to get together all the books that he might at some time wish to consult. But when the efforts of one are ineffectual, the co-operation and combined strength of the many will bring us nearer the ideal. An arrangement by means of which one book supplies the want of many at a small cost to all concerned is the most logical and feasible plan and such an arrangement is a public medical library.

C. H. Leonard in *Medical Libraries*, Mar., 1902, 5: 5. The medical library helps rich and poor alike. The young, middle-aged, childhood, and the aged are all benefited by having a large medical library at hand for instant consultation by any of our practitioners of medicine. In this way a medical library is vastly different from a law library where only two or three parties can be directly interested in the outcome of a single case.

MISCELLANEOUS EXTRACTS

The health and longevity of life in any community is dependent in great measure upon the knowledge of its medical practitioners. In the early years of practice few men can afford to buy or even give shelf room to a tenth part of all the books that they need, no man, whatever his means, can possibly acquire all. A library is consequently indispensable in every center of population or the health and lives of the community will be jeopardized by the ignorance of medical practitioners.

Medical libraries stand toward the physical health of the community very much in the same relation as do general libraries to the intellectual health.

Because health is the basis of social well being, no greater service can be done to the entire community than to establish such libraires. While laboratories of research are of the greatest value for the discovery of new facts, libraries of research are equally important for affording the scientist the knowledge of what has been done before, the pitfalls that have been discovered and the true road as distinguished from the false.

Medical literature is unlike that of any other department in science, in that its most valuable contributions are scattered through the different journals, devoted to medicine. The number of these journals has assumed such large proportions that it is impossible for one single person to subscribe for those even of real value.

James R. Chadwick in *Boston Medical and Surgical Journal*, Jan. 30, 1896, 134: 101. Money and much money is needed for the maintenance of a library. The continuous service of a librarian and perhaps one or two assistants must be paid for. Many hundred volumes must be bound every year. A certain number of periodicals must be secured for your reading rooms as soon as published and therefore by subscription. Finally an author, subject and title card catalogue must be kept up to date no matter what the expense.

Editorial

A table was now spread with phials, boxes of salve, and divers surgical instruments. As the latter appeared in succession, from a case of red morocco, their owner held up each implement to the strong light of the chandelier, near to which he stood, and examined it with the nicest care. A red silk handkerchief was frequently applied to the glittering steel, as if to remove from the polished surfaces the least impediment which might exist, to the most delicate operation. After the rather scantily furnished pocket-case which contained these instruments was exhausted, the physician turned to his saddle-bags and produced various phials, filled with liquids of the most radiant colors. These were arranged in due order, by the side of the murderous saws, knives, and scissors, when Elnathan stretched his long body to its utmost elevation, placing his hand on the small of his back, as if for support, and looked about him to discover what effect this display of professional skill was likely to produce on the spectators.

The Pioneers.

J. FENIMORE COOPER.

The Passing of the Amphitheatre.

Of the many burning questions agitating our profession, none is now more discussed than that of medical education, and upon none is there greater diversity of opinion. It has long been evident that higher standards must be set, and these have almost universally been recognized. In the last decade the college courses have been extended from two to four years, methods have changed, and a large amount of new material has been placed in the requirements. This has been principally due to the widening field of the laboratories, which have revealed the necessity of scientific exactness in every medical procedure. But doubling the time spent in the college has not lightened the burden of the student; each departure has opened a vista of unlimited view, and the goal recedes before each attempt to reach it. There is no question of the infinity of medical science, but there is great need of establishing the basis upon which its students may be qualified to enter upon practice.

In the early settlements in America the physician was selected of necessity, from the men best qualified to meet the emergencies of sickness and accident. Frequently these practitioners had no qualifications other than common sense and a cool head. Often they had attended an older physician in the capacity of a compounder of drugs or assistant in operations. The employment of such apprentices became the custom, and as the exact-

ions became greater, the physicians of the larger towns established limited courses for instruction in anatomy and surgery, and the students "walked the wards" of the few urban hospitals. The education obtained in this manner was most eminently practical. There was little time or opportunity for the exploitation of theory. But the students increased in number, and clinical and anatomical material was scarce. The didactic lecture was the inevitable result, and the large amphitheatre was constructed to make available to increasing auditors the learning it was necessary to impart. There was a natural decadence of bedside work. Until within twenty years, courses in medical colleges consisted of a series of lectures covering a few months, in which the time was divided for the convenience of a few lecturers. There were little system and no gradation of the subjects of instruction. This was the easiest way of imparting knowledge, and the least valuable to the learner. With the advent of the laboratory the need of a change asserted itself. It may now be regarded as established that the highest function of the teacher lies in showing the pupil how to ascertain facts by direct personal observation. Although well read in the literature of cyanosis, how many students detect on the first examination the cerulean tinge of the lips in heart disease? And when this particular fact is demonstrated at the bedside all recognize it, and store it among the mental facts to be available on every succeeding occasion. It may be said that there is no department in scientific education in which direct observation is not the greatest source of knowledge. The elaborate lecture adds to the culture, the brilliance and the knowledge of the lecturer, but if he search the sources of his own learning, he finds them only sparingly in the words of others, and much more in personal experience and the activity of his own special senses in the grasping of facts.

The amphitheatre must go.

Scientific Reviews

URIC ACID METABOLISM.

1. Ueber die Stellung der Purinkörper im menschlichen Stoffwechsel;
I. Untersuchung.
BURIAN AND SCHUR,
Archiv für die Gesamte Physiologie, 1900, lxxx, 241
2. Ueber die Stellung der Purinkörper im menschlichen Stoffwechsel;
II. Untersuchung.
BURIAN AND SCHUR
Archiv für die Gesamte Physiologie, 1901, lxxxvii, 239
3. Some Points on Metabolism in Gout,
THOMAS B. FUTCHER,
The Practitioner, 1903, lxx, 181
4. Metabolism in Gout,
I. WALKER HALL,
The Practitioner, 1903, lxxi, 61
5. The Present Status of the Uric Acid Question,
WALTER BAUMGARTEN,
Journal of the American Medical Association, 1904, xlii, 431
6. Purinemia,
R. W. WILCOX,
American Medicine, 1904, xliii, 1685
7. The Etiology and Pathology of Gout,
THOMAS B. FUTCHER,
Journal of the American Medical Association, 1904, xliii, 1597, 1680
8. On the Relation Existing between Uric Acid Excretion and the
Breaking Down of the White Corpuscles,
O. K. WILLIAMSON,
Lancet, 1904, clxiv, 1580
9. Alloxuric Execution in a Case of Leucopenia,
HUTCHINSON AND MACLEOD,
Journal of Experimental Medicine, 1900, v. 544
10. The Elimination of Endogenous Uric Acid,
ELBERT W. ROCKWOOD,
The American Journal of Physiology, 1904, xii, 39
11. Pathologic Increase of Uric Acid,
E. E. SMITH,
American Medicine, 1904, vii, 1019

Fifteen years ago it was almost universally believed that in mammals uric acid represented a stage in the metabolism of all proteids preceding the end product urea. This was suggested by the similarity between the formulæ of uric acid and urea. Urea was regarded as the normal, fully oxidized product of nitrogenous metabolism and uric acid as a less oxidized product. It is believed to-day that the formation of much of the uric acid excreted by birds and reptiles takes place in this way.

If this were true in mammals variations in the amount of proteid in the diet should be followed by corresponding variations in the amount of urea and uric acid excreted. Hirschfeld, however, found that if a diet were used from which meat was excluded but in which other proteids were allowed, the uric acid remained constant, while the urea fluctuated with the quantity of proteid ingested.

Horbaczewski in 1891 obtained a marked rise in uric acid elimination by feeding nuclear materials, such as the thymus, liver, pancreas and kidney. The ability of nucleins to increase the uric acid output was thus demonstrated.

It was shown also that when the nucleins were excluded from the body by starvation the uric acid excretion was much reduced. That it did not disappear was explained by the breaking down of the cell nuclei of the organism itself.

These experiments and others led to the theory now quite generally accepted that practically all the uric acid found in the urine of mammals is derived not from all proteids but only from one variety, the "nucleins."

The Purin Bodies. "The nucleins differ from the true albuminus in containing (in addition to carbon, hydrogen, nitrogen, oxygen and sulphur), a variable amount of phosphorus, and in some instances also iron. They are essentially albumins which are closely combined with a phosphoric acid radicle and in certain cases with basic substances known as purin or alloxuric bases." These bases together with a phosphoric acid radicle constitute nucleinic acids. The bases are known as xanthin, guanin, adenin, etc., and according to Emil Fischer are all derived as substitution products from a hypothetical substance which he calls "purin." The purin bases and uric acid he includes together under the term "purin bodies." They may be all derived from the nuclei of tissue cells in the body, the leucocytes, or from preformed purins in the food.

Burian's and Schur's Studies. Recent investigations have shown more accurately the conditions under which uric acid is derived from nucleins. Among the most complete and thorough studies made up to this time are those of Burian and Schur.

The authors refer to Horbaczewski's teaching that the purins found in urine aside from the portion derived from preformed purins in the food, come exclusively from the breaking down of the nuclein of leucocytes. They undertake to carry out

three investigations: First, to ascertain whether it is possible to determine what portion of the uric acid and purins in the urine is derived from the food and what portion from metabolic processes; second, to determine whether the uric acid and purins in the urine are really end products or intermediate products, and if the latter, what proportion of the purins found in the body are further metabolised and do not appear in the urine; and third, to make a critical experimental study of Horbaczewski's theory. The first two investigations have been completed and published.

In the first report the authors give an historical review of the uric acid question and describe their own experiments. They designate urinary purins derived from the food as "exogenous purins" and those derived from the metabolic processes of the body as "endogenous purins." They find it possible to determine the amount of endogenous purins by keeping the individual on a "purin-free" diet. By analysis and experiment they find that the following articles are practically free from nuclein and may be used in such a diet: milk, cheese, eggs, white bread, butter, rice, lettuce, cabbage and potatoes. Individuals were kept on such a diet and determinations of the urinary purins were made. It was found that in a given person following a regular mode of life, the endogenous uric acid and purins remained constant. This constant amount was peculiar to the individual and varied somewhat in different individuals.

As a result of further experiments with the use of diets containing known amounts of preformed nucleins, the authors conclude that:

The exogenous urinary purins are derived exclusively from preformed purin complexes in the food, which, however, are not all transformed into urinary purins, a certain portion being further broken down in the body. The proportion which is thus disposed of does not vary with the individual but with the kind of purin ingested. The amount of exogenous purin furnished by different nuclein containing foods, such as liver, thymus, etc., can be determined accurately.

Therefore if the diet is known the exogenous uric acid can be estimated and from it indirectly the endogenous uric acid as well, without putting the patient on a purin-free diet. Determinations made by the direct method with the patient on a purin-free diet, and also by the indirect method on a mixed diet, indicated that

the daily amount of endogenous uric acid excretion was, in the majority of cases, between 0.1 and 0.2 grammes. The problem of the first investigation, whether the endogenous uric acid could be determined was thus solved.

As a result of numerous experiments — many of them on dogs — carried out in their second investigation, the authors report that the endogenous as well as the exogenous uric acid is an intermediate product, that is, a metabolic product which undergoes further decomposition in the body. That this is true of the endogenous portion follows from the fact that when the kidney and the liver — which the authors believe to be the organ in which further decomposition principally takes place — is removed from the circulation in dogs, endogenous uric acid appears in the blood. This does not occur when the kidney only is removed.

In spite of the fact that a portion of the uric acid derived from the food or from metabolic processes is thus broken down in the body a definite proportion is eliminated unchanged. This portion makes up the uric acid in the urine and must be multiplied by a factor in order to obtain the total amount of uric acid coming from these sources into the blood. The statement is made that in man about half of the uric acid coming into the circulation is eliminated unchanged.

Normal Uric Acid Metabolism. It can be readily appreciated that the work of Burian and Schur has furnished valuable and practical data for the further study of uric acid elimination both in health and disease. Perhaps the most essential fact brought out, and the one on which the present conception of uric acid metabolism rests, is the fixed value which the endogenous uric acid maintains in a given individual following a given mode of life, and which is not influenced greatly by the general proteid metabolism. The exogenous uric acid is an addition to the endogenous uric acid, and depends on the quantity of purin bases in the food. Only certain of the purins increase uric acid elimination. The amount of exogenous purin eliminated in the urine in health depends, not on the individual but on the kind and amount of purin ingested. The uric acid eliminated in the urine after the intake of exogenous oxy-purins is about fifty per cent. of the amount fed, the remainder being changed in the liver into some form intermediate between uric acid and urea. Hutchinson and MacLeod state that no appreciable amount of purins is lost with the faeces.

The degree to which the body can eliminate as uric acid ingested purin bases suggests a new method for the study of uric acid elimination in disease. There is also probably a definite time period for the elimination of exogenous purin, which varies with each individual, which, if determined, would furnish a valuable index of the uric acid metabolism.

Since these distinctions between "endogenous" and "exogenous" uric acid have been made by Burian and Schur comparatively few studies of uric acid excretion have been reported. The older determinations made without these data now have a lessened value. Among the more recent reports are those of Siven, Kaufmann and Mohr, Walker Hall and Rockwood.

Siven found that the endogenous uric acid remained constant in spite of variations in the quantity and composition of the purin-free diet. Kaufmann and Mohr believed that the endogenous uric acid might be diminished by over feeding with non-nitrogenous food. Constancy in endogenous purin excretion points to normal metabolism as demonstrated by Burian and Schur, and an increased endogenous output to increased cell destruction going on in the body. In the maintenance of normal metabolism several factors are concerned. It is desirable that a large number of observations should be made on healthy individuals of varied habits and living under different conditions. Walker Hall states that the endogenous uric acid in a given individual while constant under fixed conditions of life varies with the amount of exertion to which he is subjected. Sherman has lately failed to find any increase in uric acid elimination, following vigorous exercise, and Rockwood finds in two cases that a considerable increase in bodily exercise did not affect the uric acid output noticeably. Other observers maintain that with the subject in good physical training, labor causes no increased output of uric acid, while if the body is not well trained the reverse is true. Rockwood and Pfeil have found an increased hourly excretion of endogenous uric acid during the day.

Beebe finds that alcohol causes an increase in uric acid elimination, and believes that this effect is due to a toxic action on the liver interfering with the oxidation of exogenous uric acid. The effect of other drugs on uric acid elimination has not been thoroughly worked out. Some data on this point may be found in Burian's and Schur's work. Wilcox recommends the use of the salicylates in gout as agents causing elimination of uric acid from the tissues.

Rockwood and Fuller find great variations in the endogenous purin excretion of children, the latter suggesting that marked idiosyncrasies or hereditary tendencies manifest themselves in this connection in children.

Other statistical data in regard to the output of endogenous uric acid under normal and experimental conditions have been published by Walker Hall. Rockwood gives references to most of the recent studies.

The form in which uric acid circulates in the blood is a matter of considerable difference of opinion. It cannot be demonstrated in normal human blood by methods now available. Minkowski believes this is on account of a loose organic combination with a purin base which prevents precipitation by the usual re-agents.

Of the total purins of the urine about nine-tenths are present as uric acid and one-tenth as purin bases.

Uric Acid Elimination and Leucocyte Destruction. Horbaczewski believed that urinary purins were formed as a result of the destruction of the increased number of leucocytes which the use of nuclein-containing food or metabolic processes caused to appear in the blood. Thus he would make the destruction of leucocytes the exclusive source of uric acid in the urine, whether endogenous or exogenous. Burian and Schur do not agree with this view, but claim that many of the preformed purins of the food are eliminated unchanged in the urine. In cases where there is extensive leucocyte destruction, as in leukemia, there is an increased amount of uric acid in the blood and in the urine, from the decomposition of the nucleins of the leucocytes.

Williamson examined the blood in twenty cases — not leukemic — at the same time estimating the amount of uric acid and phosphates in the urine. He found that a fall in the number of white cells was in seventeen cases followed by an increase in the excretion of uric acid and phosphates.

Hutchinson and MacLeod found a diminished number of leucocytes in a case kept of purin free diet. This leucopenia was not accompanied by a diminution in the purins excreted, and indicated an increased destruction of the leucocytes.

Uric Acid Metabolism in Gout. What the relations of uric acid to gout are has only begun to be worked out. Comparatively few determinations have been made recently.

Kaufmann and Mohr have made some observations which tend to show that in the intervals between the acute attacks

the excretion of uric acid and purin bases are practically normal in amount. Walker Hall accepts these statements with the proviso that existing data of the variations in health are too few and that the duration of the experiments was too short for absolute proof. Immediately preceding the acute attack there is regularly a diminution of the amount of uric acid eliminated, followed by an increase after the attack. Futcher found a diminished excretion also in the intervals between the attacks.

Most observers agree that there is an excess of uric acid in the blood in gout. How this is brought about is still a matter of discussion. According to Futcher three possibilities present themselves: 1. Increased formation. 2. Diminished destruction or oxidation. 3. Diminished excretion. Wilcox believes that the first is the explanation and that gout is a toxemia of varying causation, accompanied by the formation of an excess of urates due to the breaking down of the leucocytes and fixed cells in an attempt to neutralize the poison. Futcher thinks it most probable there is retention of uric acid in the circulating blood on account of diminished excretion.

The intimate association of uric acid and phosphoric acid in the composition of nucleins indicated that an increased uric acid elimination would be accompanied by an increased elimination of phosphates. In three cases of gout reported by Futcher such a parallelism was shown.

The endogenous purins, according to Hall, cannot be regarded as the causative factor in gout. They do, however, express the extent of tissue toxemia as measured by cell destruction.

Smith, while admitting that in health a large proportion of the endogenous uric acid may be derived from nuclein breakdown, that is, from destructive metabolism, says that it is not probable that this is always true in disease. In the latter case he suggests that uric acid may be formed by the synthesis of urea and lactic acid.

Exogenous purins as shown by Vogt, Chalmers, Watson and others are more slowly excreted in gout than in health, and in some cases there is distinct retention. The time period for the excretion of exogenous purins probably varies with each individual and should be investigated in normal individuals. Without doubt excess of exogenous purins leads to excess of uric acid purins in the blood. Wilcox suggests that gouty patients be placed on a purin free diet.

ARTHUR T. LAIRD.

I. THE PATHOLOGY OF ICTERUS.

II. EXPERIMENTAL CIRRHOSIS OF THE LIVER.

JOANNOVICS, G.

- (1) Recherches Expérimentales sur la Pathogénie de l'Ictère, *Mémoires Couronnées et autres mémoires publiés par L'Académie Royale de Médecine de Belgique*, 1903, XVIII.
- (2) Experimentelle Untersuchungen über Ikterus, *Zeitschrift für Heilkunde*, 1904, XXV, 25.
- (3) Ueber Veränderungen der Leber bei Vergiftung mit carbaminsauren und kohlensauren Ammonium, *Archives Internationales de Pharmacodynamie et de Therapic*, 1903, XII, 35.
- (4) Ueber experimentelle Lebercirrhose, *Wiener klinische Wochenschrift*, 1904, XVII, 757.

The value of the experimental method in pathology is well illustrated in the results obtained by its application to icterus. While the etiology of hepatogeneous jaundice was indicated by clinical observations and pathological studies, the final demonstration of the exact mechanism of the resorption of bile was based on experimental duct ligations, followed by careful histological studies. So too has the pathology of haematogenous jaundice been elucidated by experimentation with blood destroying (haemolytic) substances. This problem, however, has not been as simple as that of the obstructive form of jaundice. In the latter we have to deal with bile formed in a natural way at practically a normal rate. The accumulation of this fluid within the bile passages, its diffusion into the lymphatic system of the liver, and its final entrance through these channels into the general circulation, with the staining of the various tissues and fluids of the body, can readily be appreciated. In the haematogenous form on the other hand, several factors must be considered; first is the primary injury to the red cells followed by complete lysis, or is the influence of some other organs as the spleen necessary to complete this destruction, and finally are the pigments thus set free analagous to bile pigments or do they undergo a further change in the liver? Joannovics in a very complete series of experiments has added much of value to our knowledge of these changes. The majority of his experiments were made with toluylendiamin, a powerful blood lysin, which produces icterus, and if given in large doses, haemoglobinaemia and haemoglobinuria. By administering the poison with the animal's food, in small doses at irregular intervals, he was able to produce subacute and chronic intoxications characterized

by loss of weight, general bile staining of the tissue and urine, and severe alterations in the blood. These latter were shown by the appearance of nucleated red cells, polychromatophilia and poikilocytosis and an increase of eosinophiles.

Histological examination showed the liver cells in various stages of degeneration with, in some instances, focal areas of necrosis. The bile capillaries were gorged with bile, and the liver cells laden with an excess of pigment. The occurrence of necrosis he explains by the pressure of the over-filled bile vessels upon adjacent cells, and in some instances by rupture of the same with disintegration of liver tissues. The spleen in all cases was gorged with blood and contained much pigment. The kidneys, especially their convoluted tubules showed evidence of degeneration and necrosis, while the straight tubules contained coagulated material resembling casts.

To determine the effect of the spleen upon the pigment formation, dogs were splenectomized and then poisoned with toluylendiamin. In such animals receiving large doses the jaundice did not appear for three or four days; while with repeated small doses it might be delayed two weeks or more. This is in decided contrast to the experience with the normal dog, in which icterus appears usually within twenty-four hours. It was also found that the splenectomized dogs had a greater resistance to the toxic effect of the toluylendiamin than did normal dogs. These results Joannovics considers to be corroborative of Vast's view that toluylendiamin injures the red cells but does not completely destroy them; the complete destruction is brought about by the action of the spleen. In the absence of the spleen the setting free of the blood pigments is retarded and the appearance of jaundice delayed.

In a third series of experiments, before administering the poison, Joannovics extirpated the left kidney and established a connection between the left renal vein and the splenic vein, thus diverting the blood of the spleen from its normal course through the liver. The object of this procedure was to prevent the entire mass of pigment formed in the spleen from passing immediately to the liver. In such animals the condition which resulted was more acute than in the splenectomized animal. The icterus, however, appeared more slowly than in the normal animal and the toxic effect was not so great. The pigment apparently is transferred from the spleen to the liver in smaller amounts and less rapidly than is the case in the normal animal.

In another type of experiment a dog received a small dose of toluylendiamin, and on the fourth day, before icterus had appeared, the spleen was removed. On the fifth day icterus developed, indicating that the blood cells had been destroyed and their pigment deposited in the liver before the spleen had been removed; also that after small doses the transformation in the liver of blood pigment to diffusible pigments requires a considerable period of time.

Control experiments with dogs in which the common duct had been ligated yielded a difference in the type of jaundice and in the histological changes in the liver. A dog receiving a small dose of toluylendiamin, several days after the appearance of the icterus due to obstruction, developed a more severe type of icterus with fatal termination in two days.

In another series of experiments Joannovics was able to produce icterus in the dog by injecting haemolytic immune sera (serum of rabbit injected with dog's blood). This developed within twenty-four hours and was of severe grade. In the icterus produced by haemolytic serum, however, the part taken by the spleen is not prominent; the action of the serum upon the red cells is final and complete, differing in this way from that of toluylendiamin. In splenectomized animals and in those with a renal and splenic vein anastomosis the icterus develops as rapidly as in normal animals, with also a more rapidly fatal termination.

The main conclusions to be drawn from Joannovics' experiments are as follows:

1. Icterus due to haemolysis develops very rapidly compared to that produced by obstructions, and is also more intense.
2. The bile stasis due to the former appears first in the bile capillaries, that due to the latter in the large ducts and later the small perilobular ducts.
3. In some forms of haemolytic icterus the toxic agents (toluylendiamin) produces a primary injury of the red cells, but the spleen completes the final destruction. With other agents (haemolytic sera) the icterus develops without the intervention of the spleen.
4. In excessive destruction of red cells a portion of the pigment may be eliminated by the kidneys directly as haemoglobin (haemoglobinuria), while the remainder, carried to the liver, is transformed into bile pigments. With moderate destruction, no haemoglobinuria, but icterus alone, develops.

In conclusion, a word may be said concerning the possibility of the formation of bile pigment from blood pigment without intervention of the liver. Joannovics does not touch upon this question, probably because it has been quite generally decided in the negative. It is well known, however, that one of the pigments (haematoidin) resulting from the disintegration of blood cannot readily be differentiated from one of the bile pigments (bilirubin). That a diffusible pigment capable of producing icterus may also be directly formed from haemoglobin has not been proved. All evidence points to the intervention of the specific action of the liver cells. The only experiments upon this point are, as far as I am aware, those of Minkowsky and Naunyn (*Archives f. Exper. Path. u. Pharmacol.*, 1886, XXI). These investigators found that the icterus (haemolytic) produced in geese by arsenic and by toluylendiamin disappeared upon the extirpation of the liver; conclusive proof that the liver cells are essential in the formation of the pigments of the bile from those of the blood.

II. Despite the vast number of clinical, pathological and experimental investigations of cirrhosis of the liver, little has been added to our knowledge of the essential etiology of the primary changes preceding the well developed forms of the lesions. The pathologist has been able merely to describe the anatomical conditions found. The clinician and the physiological chemist working together have described various substances which as the result of disturbances of metabolism make their appearance, or occur in increased amount, in the course of the disease. The supposition that these may constitute an auto-intoxication leading to repeated injuries of liver cells with resulting repair and the progressive formation of connective tissue has led to many experimental investigations. It was with this point in view that Rovighi and Portioli produced in rabbits chronic intoxication by prolonged subcutaneous administration of carbamate of ammonia. Ammonia carbamate, the immediate antecedent of urea is found in the body in small amounts under normal conditions, but in certain pathological conditions is increased. The administration of the ammonium salt for periods of fifteen to thirty days produced a mild grade of cirrhosis characterized by atrophy and degeneration of liver cells and the appearance of fine strands of connective tissue which surrounded, and to a slight extent invaded the lobules. Changes were observed also in the interlobular vessels and

accumulations of round cells occurred. These results Joannovics has repeated, introducing the poison, however, directly into the stomach by means of a tube, with similar results. He finds, moreover, that the same lesions may be produced by administering the carbonate of ammonia and concludes that the experimental condition observed is due to the ammonia element of the salt and not to the carbaminic acid. Carbamate of ammonia, he holds, is a very unstable salt and before it reaches the liver is transformed to the carbonate. The value of the theory of the Italian investigators that this experimental intoxication is analagous to an autointoxication by carbaminic acid in man therefore loses its force.

Somewhat allied to these experiments are those of Boix, who believes cirrhosis to be due to the products of decompositions, especially the fatty acids, developing in a dilated stomach. This idea has some support from the clinical observation that cirrhosis is sometimes associated with a history of overeating. Boix by feeding butyric acid and acetic acid to animals was able to produce lesions somewhat analagous to the cirrhosis seen in man. These results Josselin de Jong could not confirm, but Joannovics has repeated the experiments with positive results.

It is of interest that while alcohol is recognized clinically as a common cause of cirrhosis in man, its administration to animals, though causing degenerative changes in the liver cells, has never, with the possible exception of Merten's inhalation experiments, produced lesions analagous to the disease in man. A very definite cirrhotic process is described by Mertens in animals receiving subcutaneous injections of chloroform mixed with paraffin oil in order to insure slow absorption. Joannovics has repeated this experiment and confirms fully Merten's results. The latter describes a very typical early cirrhosis following the prolonged administration of toluylendiamin and as the result of injection of haemolytic immune sera. The increase of connective tissue in these experiments appears to be due to repair following focal necrosis of liver cells.

A review of the entire literature of experimental cirrhosis brings out some interesting points. Despite the fact that a well developed cirrhosis analagous to that occurring in man has not been reproduced, it is surprising how many successful methods of inciting the slighter changes exist. Van Heukelom (*Ziegler's Beiträge*, 1896, XX) has collected from the literature nineteen different methods, and in Joannovics summary this list is con-

siderably augmented. These may be readily divided into two groups. In the first we have procedures essentially mechanical in nature, as ligation of the ducts or vessels of the liver or the injection of irritating substances, either into the ducts or directly into the liver substance, or their application to its surface. The second group includes the administration, by the mouth or by subcutaneous or intravenous injection, of various toxic substances. Some of these have already been mentioned; others are phosphorous arsenic and other inorganic substances, various coal tar products, bacterial toxins, tobacco, peptone, etc.

As a general rule the mechanical methods lead to a connective tissue formation, sometimes with considerable sclerosis, but the lesion under these circumstances is more of an atrophy than a cirrhosis. The toxic agents tend to produce a primary degeneration of the liver cells, with in some instances, a slight increase of connective tissue. This rule is not absolute, for Adler found that in rabbits with chronic tobacco intoxication, there occurred a perilobular increase of connective tissue without degeneration of hepatic cells; and Wells observed a similar condition after prolonged administration of peptone.

The bulk of evidence obtained by experimentation appears however to support Kretz's (*Wiener klin. Wochenschrift*, 1900, s. 271) view, based on an extensive study of the lesions in man, concerning the pathogenesis of cirrhosis. He believes that cirrhosis is due to a succession of degenerative and regenerative processes occurring in the periphery of the lobule. Toxic agents, acting perhaps more or less intermittently, cause degeneration or necrosis of liver cells. In the repair which follows, the loss is replaced in part by hypertrophy and multiplication of uninjured liver cells, but at the same time there is more or less proliferation of the perilobular tissue. As the process continues this connective tissue formation increases in amount, forms a definite sclerotic ring about the lobule, and invades the lobule itself. That the primary lesion occurs at the periphery of the lobule and is due to toxic substances brought by the portal circulation is evident in some of the experiments upon animals. There is therefore sufficient basis for the supposition that the elucidation of the problem of cirrhosis will ultimately be through the use of some toxic agent producing the series of changes described by Kretz.

RICHARD MILLS PEARCE.

December 3, 1904.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR DECEMBER, 1904.

<i>Deaths.</i>	1901	1902	1903	1904
Consumption.....	29	14	11	22
Typhoid fever.....	1	0	3	1
Scarlet fever.....	0	0	0	3
Measles.....	0	0	0	0
Erysipelas.....	0	1	0	2
Whooping cough.....	0	2	0	0
Diphtheria and croup.....	5	4	2	2
Diarrhœal diseases.....	1	1	1	1
Pneumonia.....	11	14	13	15
Broncho-pneumonia.....	4	5	3	7
Bright's disease.....	8	14	17	17
Apoplexy.....	8	9	9	11
Cancer.....	13	9	11	11
Accidents and violence.....	3	9	3	5
Seventy years and over.....	24	29	33	21
Under one year.....	10	18	10	13

Total number of deaths.....	138	139	142	151
Death rate.....	16.24	16.36	16.70	17.77
Death rate less non-residents	15.65	15.53	15.41	16.95

<i>Deaths in Institutions.</i>	1901		1902		1903		1904	
	Total	Non-residents	Total	Non-residents	Total	Non-residents	Total	Non-residents
Albany Hospital.....	10	1	12	5	15	5	9	3
Albany Orphan Asylum.....	3	0	0	0	0	0	0	0
Child's Hospital.....	0	0	1	0	1	0	0	0
County House.....	5	1	3	2	3	0	4	1
Home for Aged Men.....	0	0	1	0	1	0	0	0
Homeopathic Hospital.....	1	0	3	0	4	3	2	1
Hospital for Incurables.....	0	0	0	0	0	0	0	0
House of Shelter.....	1	0	1	0	0	0	0	0
Little Sisters of the Poor.....	0	0	1	0	0	0	1	0
Public Places.....	1	1	0	0	5	1	1	1
St. Margaret's House.....	0	0	0	0	0	0	2	0
St. Peter's Hospital.....	4	2	2	0	2	2	4	1
Births at term.....								87
Premature births.....								2
Still births.....								3

Total.....	92
Marriages.....	48

WORK OF HEALTH PHYSICIANS.

	1901	1902	1903	1904
Cases assigned.....	34	60	74	89
Total number of calls made.....	249	307	387	405

INSPECTIONS.

In the Bureau of Markets and Milk, sixty inspections were made of markets and twenty inspections of milkmen.

In the Bureau of Mercantile Establishments, twenty inspections were made, six factory certificates were issued, and thirty-six mercantile certificates.

In the Bureau of Sanitation, there were twenty-one complaints made, of which two were of privies, three of closets, two of drains, five of plumbing, two of water, and four others. There were thirty-eight inspections made, and thirty-four reinspections, five complaints were found to have been made without cause, twelve nuisances were abated, and nineteen notices were served.

In the Bureau of Plumbing, Drainage and Ventilation, there were one hundred and forty-five inspections made, of which seventy-six were of old buildings and sixty-nine of new buildings, twenty-four iron drains were laid, seventeen connections with street sewers made, eighteen tile drains laid, twenty-three cesspools put in, thirty-eight wash basins, forty-four sinks, thirty-six bath tubs, thirty-nine wash trays and fifty-three tank closets. Fifty-eight permits were issued, of which fifty-one were for plumbing and seven for building purposes. Five plans were submitted for approval, of which one was for an old building and four for new buildings. Twenty-one houses were tested on complaint; eighteen with peppermint test and three with blue test, and ten water tests were made. Thirty-seven houses were examined on complaint and thirty-four reinspections were made.

BUREAU OF CONTAGIOUS DISEASES.

<i>Cases Reported.</i>	1901	1902	1903	1904
Typhoid fever	6	8	6	6
Scarlet fever.....	2	9	7	14
Diphtheria and croup	51	25	45	12
Chickenpox.....	8	22	13	23
Measles	11	1	29	0
Whooping cough	0	3	0	0
Consumption	2	1	0	2
Number of days quarantine for scarlet fever:				
Longest..... 37 Shortest.....	8	Average.....		21
Number of days quarantine for diphtheria:				
Longest..... 22 Shortest.....	6	Average.....		12
Fumigations: Houses.....	29	Rooms.....		83

ANTITOXIN.

Cases of diphtheria reported.....	12
Cases in which antitoxin was used.....	8
Cases in which antitoxin was not used.....	4

There were two deaths from diphtheria; one was a female 5 years old, sick four days, antitoxin was used on the third day; died fourteen hours after its use. The other death from diphtheria was a male, nine years old, sick five or six days; antitoxin used few hours before death.

BENDER LABORATORY REPORT.

Cultures for Diphtheria

Initial positive.....	12
Initial negative.....	24
Release positive.....	3
Release negative.....	8
Total.....	47

Examination for Tuberculosis

Initial negative.....	3
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Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular meeting of the Medical Society of the County of Albany was held in Alumni Hall on January 11, 1905. The meeting was called to order by the President, Dr. Boyd, at 8:40 p. m. The members present were: Drs. Ball, Bedell, Boyd, Branan, Carey, Cox, Craig, Curtis, Dawes, Gordinier, Gutmann, Lanahan, Moore, C. H., Mosher, Moston, Papen, Rooney, Ryan, Stanton, Stillman. Theisen, Vander Veer, Albert, Vander Veer, J. N., Wansboro, Ward, Wiltse, Winne, C. K.

Dr. S. B. WARD moved that the minutes of the last meeting be adopted as printed in the ANNALS. Seconded. Carried.

Dr. ROONEY introduced a resolution calling the attention of the Board of Supervisors of the County of Albany to the need of a sanatorium for the treatment of all cases of tuberculosis, especially those who are refused admission to the State Hospital at Raybrook because of the advanced state of the disease, to be located in the county. Seconded by Dr. BEDELL. In the course of discussion Dr. WARD said that he had long felt the need of an institution of the sort recommended in the resolution. Of all classes of the sick the tuberculous were the class least able to help themselves, most liable to contract the disease and to spread it through the tenements through ignorance and carelessness in the observance of means of prevention, and the most criminally neglected of all sick. So far as he knew there was but one institution receiving the tuberculous and even there, there was no provision made for open air treatment. That place was the County Hospital. He felt that every practitioner had seen instances of the unintentional cruelty of this sort of thing. He heartily endorsed the project and hoped for its success. The resolution was adopted.

Dr. HERMON C. GORDINIER then opened the symposium on "Tumor of the Brain," his paper being entitled "Symptomatology and Diagnosis of Cerebellar Tumor; with a Report of Four Cases."

Dr. H. L. CAREY then read a paper on the "Pathology of Brain Tumors."

Dr. A. W. ELTING completed the symposium with a paper on the "Surgery of Tumors of the Brain."

Dr. J. MONTGOMERY MOSHER opened the formal discussion. He said that the completeness of the presentation of the subject in the papers of the evening almost precluded criticism. He was sure that he could not in any manner supplement the information given by the various readers in the symposium of the evening but thought that he might add a little to the casuistics of the subject by narrating the history of a case which had interested him very much. The patient had been under the care of Dr. Moston and had been seen by Dr. Mosher in consultation. For some time previous she had complained of severe headache,—which was frontal in type—and disturbance of the eyesight. She gradually developed difficulty in walking tending to sway widely and at last came to be bedridden from inability to get about without falling. When Dr. Mosher first saw her the patient's mental condition was very cloudy so that she was unable to give the past history of her case. She complained constantly of severe headache, had bilateral ptosis, with divergent squint. The pupillary reactions were normal and the ophthalmoscopic examination showed no choked disk, but there was, however, some congestion of the intraocular vessels. At times the patient attempted to get out of bed, and during these efforts seemed to invariably turn toward the right. In fact these movements, which were taken to be voluntary, Dr. Mosher felt were in the nature of forced movements.

The patient progressed badly, became stuporose, comatose and died. The autopsy showed a tumor making pressure on the corpora quadrigemina. In this case we had some of the symptoms of cerebellar tumor, in which, however, the tumor proved to be of another part of the brain. The distinctive feature of the case lay in the paralysis of the extrinsic muscles in the distribution of the third nerve, with complete preservation of the function of accommodation and refraction and pupillary reactions. In other words part only of the nucleus of the third nerve was involved and part entirely escaped. Dr. Mosher then described the structure and function of the reflex arc involved in this rare and peculiar case. Concerning the operative intervention in cases of cerebral tumors he had a very clear recollection of one case in which the patient had attacks of Jacksonian epilepsy beginning in one of the hands. These attacks recurred, limited to this single extremity for some time and then commenced to irradiate to the extremities of the same side, up to this time without loss of consciousness at the time of attack. Shortly after the whole side was attacked, the patient commenced to have attacks of general convulsions accompanied by loss of consciousness and biting of the tongue. The attacks then diminished until the hand only was affected, as at first. Here was, it seemed a perfectly well defined typical case of a tumor involving the area of the brain corresponding to the hand of the extremity first to be attacked and by its enlargement causing such increase of pressure that general convulsions resulted. Such, at least, was the diagnosis made by a neurologist of international reputation. Operation was done and no

tumor found, but a diffuse gliomatosis within the hemisphere. The patient continued to have his attacks.

Dr. STANTON, who took the place of Dr. Hun, who was unavoidably absent, said in part as follows: That, in his opinion the symptoms of tumor of the brain might be divided into three groups: (1) symptoms due to all classes of tumor of the brain, headache and vomiting; (2) symptoms occurring in the motor area as shown in local or general convulsions; (3) symptoms occurring in tumor of the cerebellum, corpora quadrigemina and basal ganglia, such as ataxia, forced movements, cranial nerve paralyses, especially oculomotor palsies. It was the rule to postulate a single lesion as causing all the symptoms and thus discerning the location of the growth, but it has been found in that very many cases it was impossible thus to account for all the symptoms present. The newer work of Weigert and Mallory, and the stains for differentiating cerebral tissues had opened up a wide field in the investigation of the obscure pathology of intracranial growths. They had shown that the tumors which had hitherto masqueraded under the name of sarcomas were in reality higher cellular gliomas. Concerning the advisability of operating in case of syphilitic tumor he recollected two operations done by Dr. Keen, of Philadelphia, for encapsulated gummas.

Dr. WARD moved that the thanks of the Society be tendered the readers of the various papers comprised in the symposium. Seconded. Carried.

Dr. WARD said that nearly forty years ago he had seen a case of very interesting brain tumor in the person of the son of one of his friends. The boy was a lad of fifteen. One of the symptoms was very striking and was unaccounted for by any of the men who saw the boy. When he sat up in bed he was absolutely unable to see a thing although when he was lying down he was perfectly able to read the newspaper. At autopsy it was found that the tumor made pressure at the optic chiasm.

Dr. GORDINIER in closing the discussion said in part as follows: That he was deeply interested in the case reported by Dr. Mosher. Nothnagel in 1889 first reported the symptom-complex distinctive of tumors of the corpora quadrigemina which were: ophthalmoplegia externa and interna followed by cerebellar ataxia, vertigo and forced movements. Two cases presenting these symptoms were seen by Dr. Gordinier in Nothnagel's wards shortly afterward, and after a little time he had one case of his own which in every way agreed with Nothnagel's description. The reason the intrinsic muscles of the eye are not more often involved in quadrigeminal growths is that they lie much more ventrad than the nucleus of the extrinsic muscles.

The case narrated by Dr. Ward seemed in all probability due to a tumor of the pituitary body, which fell away from the chiasm when the boy lay down, thus relieving the optic tract from pressure and allowing the conduction of sensation.

On motion the Society adjourned.

JAMES F. ROONEY, *Secretary*.

JAMES P. BOYD, *President*.

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—STATISTICS FOR DECEMBER, 1904. Number of new cases, 100, classified as follows: Dispensary patients receiving home care, 3; district cases reported by health physicians, 14; charity cases reported by other physicians, 30; patients of limited means, 53; total number of patients still under nursing care, 128. *Classification of diseases (new cases)*: medical, 29; surgical, 5; obstetrical, 28 mothers, 24 infants under professional care; dental, 1; throat and nose, 1; three contagious diseases in medical list; removed to hospital, 1; deaths, 3.

Special Obstetrical Department: Number of obstetricians in charge of cases, 2; number of attending obstetricians in charge of cases, 1; number of students in attendance, 10; number of Guild nurses, 7; number of patients, 6; number of visits by head obstetrician, 15; number of visits by attending obstetrician, 10; number of visits by students, 45; number of visits by Guild nurses, 57; total number of visits made in this department, 127.

Visits by Guild Nurses (all departments): Number of visits with nursing treatment, 960; number of visits for professional supervision of convalescents, 188; total for the month, 1,148. Four graduate nurses and four assistant nurses were on duty; cases were reported to the Guild by four of the health physicians and by 37 other physicians, and by one dentist.

THE CHILD'S HOSPITAL.—The twenty-ninth annual report of the Child's Hospital of this city has just appeared. During the past year, ending September 30, 1904, the hospital has been improved in many ways and changes have been made, especially in the department of surgery, which materially enlarge its sphere of usefulness. Two hundred and forty cases were treated, of which 164 were discharged cured, 42 were discharged improved, 4 were unimproved, 11 died, and 23 remained in the hospital under treatment. Fifty-eight operations were performed with most satisfactory results.

ST. MARGARET'S HOUSE.—On January 23d a concert was given at Centennial Hall for the benefit of St. Margaret's House, which is the department of the Child's Hospital devoted exclusively to very young infants. Pleasing musical selections were rendered by Miss Grace Patton, soprano; Mr. Ben Franklin, tenor, and Prof. Rogers, pianist.

CHARITY BALL.—On the evening of January 25th a military ball was given at the Armory of the Tenth Battalion, the proceeds to be given to the hospitals of the city. The committee in charge of it included most of the leading charitably inclined ladies of the city, in conjunction with the line officers of the battalion and Troop B.

THE GOVERNOR'S MESSAGE.—Governor Higgins has taken a very positive stand, in his message, upon the subject of State care of indigent insane. He favors a system of control of the financial matters in State hospitals by the Lunacy Commission instead of local boards of managers, but believes that such local boards should have the control of the internal

affairs. He also favors a separate building in each State hospital for the care of the acute cases of insanity. He protests against the commitment as dependent insane of those who are not properly State charges and who have property or relatives legally chargeable for their support. He recommends that before any insane person is permanently received in a State hospital as a State charge the question be judicially investigated as to whether such person is a pauper without relatives chargeable with his support.

CRIPPLED CHILDREN'S HOSPITAL.—The New York State Hospital for the Care of Deformed and Crippled Children, Tarrytown, N. Y., will move about April 1 to West Haverstraw, N. Y., for which site \$50,000 was appropriated by the last legislature. During the year ending September 30, 1904, 17 new patients were received, making a total of 42 patients treated during the year. The managers of the hospital would like to have the names and addresses of any poor deformed or crippled children who are not receiving surgical attention, throughout the State, especially in the rural districts.

NATIONAL HEALTH ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.—This association will hold the first annual meeting in Washington, D. C., at the new Willard Hotel, on Thursday and Friday, May 18 and 19, 1905. There will be general sessions and divisions of work into the following three sections: 1. Sociologic, 2. Pathologic and Bacteriologic, 3. Clinical and climatologic. Full particulars may be had by addressing the secretary, Dr. Henry Barton Jacobs, 11 Mt. Vernon Place, West Baltimore, Md.

PAINLESS DENTISTRY.—After three years of patient research, two professors of Geneva, Switzerland, have discovered a new anesthetic which promises to revolutionize the practice of dentistry. Finding that the nervous system was influenced by colored light, they finally discovered that blue light had a soothing effect on the nerves. A tooth may be extracted without pain and with none of the usual after-effects, by shutting a patient in a dark room and exposing his eyes to a blue light of sixteen candle-power for three minutes, causing him to lose all sense of pain although at the same time retaining his senses.

DOYEN'S CANCER SERUM.—Metchnikoff is reported to have obtained pure cultures of the micrococcus neoformans in 41 out of 121 tubes inoculated by cancer material. The colonies were most numerous in the material from malignant tumors. Doyen claims that 15 patients with cancer, inoperable in October, have been so much improved by his serum treatment that surgical intervention was rendered possible and was successfully done. Two cancers of the breast, he claims, subsided completely under serum treatment which allowed the removal of an advanced tumor on the other breast. Doyen exhibited these and eight other patients before the Paris Societe de Chirurgie on December 14th.

A NEW OPERATION FOR APPENDICITIS.—A new method of performing appendectomy has been devised by Kelly, which, it is claimed, will overcome many difficulties formerly encountered. He has devised a pair of very heavy crushing forceps which are grooved longitudinally on the

crushing surfaces and bevelled above. The appendix is grasped near its base with these forceps and crushed, while just beyond, (distally) the appendix is seized with a pair of artery forceps. The red-hot point of the Paquelin cautery is then used to amputate the appendix between the two forceps. The cautery is then carried back and forth in the groove of the crushing forceps, which have been carefully isolated from the surrounding tissues by gauze, until the stump is thoroughly burned off, and at the same time the forceps are so thoroughly heated that the crushed appendix stump is converted into a translucent, gristle-like substance. The stump is afterward invaginated as in the ordinary operation. The advantages he claims for this operation are its perfect simplicity. There is at no time any exposure of the infected mucosa, the stump is not ligated or bruised and thus left as a culture medium for organisms that have lain in it. The stump is amputated, sterilized and effectively sealed by the cautery and the inverting sutures are then applied over an area as free from contamination as the rest of the peritoneal cavity.

TO DISSECT AND STUDY FAMOUS BRAINS.—A society having for its object the education of the public to the advantages which may be secured from the scientific study of the brains of illustrious personages has been organized. A committee consisting of Prof. B. G. Wilder, Dr. E. A. Spitzka and Dr. Alexander Hrdlicka has been formed, whose object it is to formulate plans. A bequest will be devised which will conform to legal requirements, whereby persons, during life, may will their brains to the society.

PLEAS FOR HOME DRUG GROWING.—Drug manufactures and dealers are endeavoring to encourage the cultivation by our farmers of the domestic medicinal plants because there is a shortage in the supply of these plants. The shortage is so marked that we are now importing each year drugs to the amount of nearly \$16,000,000 which were formerly produced from plants gathered in this country. Some of them are the common dandelion, burdock, couch grass, golden seal, senega, or snake root, sage, belladonna, henbane and stramonium. The authorities of India are also formulating similar plans. They are endeavoring not only to manufacture larger amounts of the drugs which are generally imported from Europe at great cost but are trying to find among the native herbs and medicinal plants those that have similar action to those imported drugs now in use so that the cost of treatment among the poor of the country may be reduced.

PERSONAL.—Dr. R. J. TAYLOR (A. M. C. '96) has removed to Antwerp, N. Y.

—Dr. HOWARD W. KATZ (A. M. C. '97) has removed to 1,316 Pitkin Street, Brooklyn, N. Y.

—Dr. THOMAS ARUNDEL (A. M. C. '97) is spending the year abroad in the study of general medicine. He is at present at King's College, London. Since graduation he has been practicing at Youngstown, Ohio.

—Dr. CONRAD R. HOFFMAN (A. M. C. 1903) is in practice at 6 Culvert Street, Glens Falls, N. Y.

IN MEMORIAM

JAMES E. JONES, M. D.

On December 25, 1904, Dr. James E. Jones passed to his reward. Dr. Jones was in his seventy-third year, and a graduate of the Albany Medical College of the class of 1855. He first began the practice of medicine in the city of Utica, and while located there served as the first physician to the City Hospital, which was organized about that time. Later, seeing a [valuable opening in the prosperous village of Clayville, N. Y., he took up his residence in that place, where he successfully practiced his profession for thirty-five years.

As it has been said of him: "He was a skilled physician of the old school, possessed of rugged common sense and quaint, old-fashioned ideas, unfailingly courteous and kind. Upright and honorable, he won the love and esteem of the entire community."

D. A. BARNUM, M. D.

At his home in Cassville, N. Y., after a brief illness, occurred the death of Dr. D. A. Barnum, on January 1, in the 60th year of his age. Although the deceased had been in poor health for some years, still his death was a surprise to his most intimate friends, as only two days before he was attending to his professional duties and seemed in his usual health.

Dr. Barnum graduated from the Albany Medical College in 1865, taking his degree before he was of age. He was immediately appointed assistant surgeon of the 16th New York Heavy Artillery, and served in that capacity until the following August, when he was honorably discharged. On his return home he took up practice with his preceptor, the late Dr. Budlong, and for thirty-eight years, up to the time of his death, had been in active practice in his native village.

In politics the deceased was an ardent Democrat, and through his activity in that party was one of the best known men in the county, serving for several years, up to the time of his death, as its executive head. Always of a happy and friendly disposition, he was ever welcome at the homes of his many patients. Although his health was poor for several years, he made light of his own troubles and was ever ready to serve his patients, even at times when he should have been caring for himself. No call was ever passed unheeded if he was possibly able to respond.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis. By WILLIAM ALLEN PUSEY, A. M., M. D., and EUGENE WILSON CALDWELL, B. S. Second Edition, 690 pages. Published by William B. Saunders & Co., Philadelphia, Penn., 1904.

The large number of books and journals devoted to Physical Therapeutics, now being published, indicates the trend of medical thought. Electricity, light, heat, vibration, ultra-violet and Roentgen rays, radium and high-frequency currents, all have their enthusiastic advocates, and many extraordinary and extravagant claims are put forth as to the therapeutic value of each. Loose and extravagant statements are foolish and unnecessary; they fail to impress the more conservative and lead the thoughtless astray. Moreover, the purely experimental stage has been passed with most of them, the under-lying principles have been carefully studied and the matter placed on a good working basis. In the work under review it is pleasing to note the fairness with which one of these is treated. The fact that a second edition of the work has appeared in so short a time indicates appreciation of the work and interest in the subject matter.

In this second edition the authors have followed the original plan; each taking a special feature. Much new material has been introduced, but advance along these lines is so rapid that a work of this size is almost old before it is ready for issue. A concise history of the origin and development of the Roentgen ray is followed by the first section devoted to Radiography. Here we note the clear and comprehensive description of apparatus, and the laws governing its action, of the trained electrical engineer. Many forms of apparatus are described and reasons given why one is preferable to another. Familiarity with an ordinarily good apparatus, however, often goes a long way in determining our estimate of its value. The care with which the author details operations of various kinds, and the posturing of subjects for radiographing will help the beginner over many stumbling blocks, while the careful record of work done, and its method, makes valuable material for comparison and reference. The technique of clinical examinations of the various regions—chest abdomen and pelvis—for detection of foreign bodies, neoplasms and disease, and for examination of articulations, injuries to, or disease of, bones are clearly stated and many suggestions offered.

In the second section, devoted to Radio-therapy, the conscientious and painstaking record of successes and failures alike makes it of much value. A long list of diseases, more or less amenable to the X-ray, is given, which indicates the broad field sought to be occupied. The subject of X-ray burns is treated at some length and several formulæ for remedies given.

It is somewhat of a disappointment that, in a work so comprehensive, no reference is made to the medico-legal aspect of either radio-therapy or radiography. The accurate diagnosis of injuries made possible by the radiograph and the responsibility of the operator for burns produced in the course of treatment are features which would seem to give it impor-

tance. In discussing the untoward effects produced on the operator there is scarcely the helpfulness one might expect from a recent book. The matter is referred under three heads: carelessness, suggestion, and the possible development of a preexisting, though latent, condition. While granting that each of these may be responsible for some of the unfortunate cases, the authors are quite non-committal. There is this to be said, however, if the instructions of the text is followed burns will be very rare.

Altogether the work is valuable for practitioner or student, full of good things; well illustrated with illustrations that help make clear, rather than befog, the text; well printed and bound; bringing the subjects treated pretty well down to date, though touching very lightly upon the subject of rapid radiography as at present practiced.

E. A. BARTLETT.

International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. KELLY, A. M., M. D., Philadelphia, U. S. A. With the Collaboration of Wm. Osler, M. D., Baltimore; John H. Musser, M. D., Philadelphia; Jas. Stewart, M. D., Montreal; J. B. Murphy, M. D., Chicago; A. McPhedran, M. D., Toronto; Thos. M. Rotch, M. D., Boston; John G. Clark, M. D., Philadelphia; James J. Walsh, M. D., New York; J. W. Ballantyne, M. D., Edinburgh; John Harold, M. D., London; Edmund Landolt, M. D., Paris; Richard Kretz, M. D., Vienna. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume III. Fourteenth Series, 1904. Philadelphia: J. B. Lippincott Company, 1904.

Following the plan of devoting considerable space to one subject, there are presented in this volume twelve articles on syphilis which take 123 of the 300 pages. In "Uncertainty as to Syphilitic Inoculation," Campbell Williams, F. R. C. S. (Eng.), describes the unusual forms of primary lesions and the proper course to take to determine the existence of syphilis. Dr. G. Carrier succeeds in establishing "Syphilitic Fever" as a distinct entity. In "Syphilitic Headache and Lumbar Puncture," Dr. G. Milian shows that this procedure is of value in distinguishing between neurotic headache and that of tertiary syphilis. Dr. William G. Spiller reports some interesting and unusual cases in "Syphilis of the Nervous System," and Dr. A. Chauffard records three cases of laryngeal syphilis with some signs of tabes. Dr. Alfred Fournier contributes a valuable article on "Syphilis and Suicide," as he has personal notes of eighteen cases and has known of others in the practice of his friends. A considerable number of suicides due to patients' learning the nature of their disease should make physicians cautious as to their methods of telling neurotic patients that they have syphilis, though a fatality cannot always be prevented by a physician's tact. Dr. William S. Gottheil strongly favors the hypo-

dermatic treatment of syphilis, usually preferring an insoluble salt, the neutral salicylate. Dr. Alfred Fournier, on the other hand, in "The Treatment of Syphilis by Calomel Injections," expresses the opinion, based on experience, that the hypodermatic use of this salt is not generally applicable, and has many disadvantages, though it is of value when quick results are necessary. There are numerous excellent illustrations in the section on syphilis, especially with Dr. Ohmann-Dumesnil's article on "The Differential Diagnosis of Syphilitic Eruptions."

In the section on treatment Dr. Lawrason Brown writes a practical article on "The Treatment of Digestive Disturbances Occurring in Pulmonary Tuberculosis," and Dr. Ismer Boas describes his application of a modified rest cure to the treatment of chronic constipation.

In the medical section Dr. Andrew Duncan has a paper on "Scurvy," in which he gives the modern theories of the etiology of the disease and a summary of the preventive measures used in the British army and navy.

Among the articles on surgery Drs. Lermoyez and Guisez report the successful removal of a nail from a bronchus by the method of bronchoscopy devised by Killian.

R. G. C.

Normal Histology and Microscopical Anatomy. By JEREMIAH S. FERGUSON, M. Sc., M. D., Instructor in Normal Histology, Cornell University Medical College, New York City. First Edition, illustrated with 462 illustrations, 738 pages. D. Appleton & Co., New York and London, 1905.

In preparing this work the author states that his aim has been to present to the reader a sufficiently comprehensive view of the subject to briefly cover the entire field of normal microscopical anatomy which should be mastered by the medical student. Both as to text and illustrations this work is the most comprehensive and best arranged text-book on the subject which has as yet appeared in this country. Without adding greatly to the length of the text the author has succeeded admirably in emphasizing the facts concerning the minute structures of the various organs which have a direct bearing upon the physiology and pathology of these organs. This feature of the book will make it of permanent value as a reference book for the student of physiology, pathology, bacteriology and the clinical branches of medicine.

In selecting the illustrations he has aimed to present exact pictures of actual sections as viewed by known magnification, a large proportion of the illustrations being photomicrographs of typical fields such as can be demonstrated in a laboratory course. The diagrammatic illustrations have been carefully selected from the standard English and foreign works.

The work is particularly complete in those chapters devoted to the microscopic anatomy of those organs which serve as a field for the specialist in medicine, 138 pages being devoted to the nervous system, 44 pages to the eye and 32 pages to the ear. The part devoted to the microscopical anatomy of the nervous system would serve admirably as a text for a laboratory course in neuro-histology.

This book will be found of great value as a text-book for the medical student, and owing to the excellent illustrations and completeness of the text, it will be found especially useful to the practitioner as a reference book.

E. MAC D. S.

A Compend of Medical Latin, Designed Expressly for Elementary Training of Medical Students. By W. T. ST. CLAIR, A. M., Professor of the Latin Language and Literature in the Male High School of Louisville, Kentucky; Author of "Caesar for Beginners," "Notes to Caesar's Gallic War, Book Three," etc. Second Edition, Revised. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street, 1904.

This little book must certainly prove of value to that class of students of medicine (which class is fortunately getting smaller every year), that takes up its studies without such knowledge of Latin as every student with an ordinary common school education should possess. It has a vocabulary of medical Latin; it gives the different declensions and conjugations with illustrative exercises of the application of each; and gives a number of prescriptions to be translated into English. There is probably less to be said against this book than for any of the helps published for ignorant or lazy students.

SPENCER L. DAWES.

Essentials of Materia Medica, Therapeutics and Prescription Writing, Arranged in the Form of Questions and Answers. Prepared Especially for Students of Medicine. By HENRY MORRIS, M. D., Fellow of the College of Physicians of Philadelphia; Associate Member of the Association of Military Surgeons of the United States; Member of the American Medical Association, etc. Sixth Edition, Thoroughly Revised by W. A. BASTRO, Ph. G., M. D., Tutor in Materia Medica and Pharmacology at Columbia University (College of Physicians and Surgeons), New York; Assistant Attending Physician to the Roosevelt Hospital Dispensary and to the Vanderbilt Clinic. Philadelphia, New York, London: W. B. Saunders & Co., 1904.

Like the other numbers of the "Question Compend" published by Saunders, this book consists of a series of questions with short and concise answers appended. These questions and answers cover the entire field of Materia Medica and Therapeutics and include the relations between the metric and apothecaries' system; rules for dosage; methods of prescription; classification of medicines; names of drugs and their doses. The answers seem to be accurate and correct, and in so far as it is possible to speak well of a text book whose main use is to help the student to pass his examinations and not to fit him to practice medicine, this book can be recommended. It is, however, like all books of its class, of no use to the student who studies for the sake of knowledge and not merely for a license to practice.

SPENCER L. DAWES.

SURGERY

Edited by A. Vander Veer, M. D.

Surgical Treatment of Chronic Ulcerative Colitis. (Die chirurgische Behandlung der Colitis ulcerosa chronica.)

NEHRKORN. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, Band 12, Heft 2-3, 1903.

The writer calls attention to the fact that the priority for this operation, which is usually assumed for American surgeons, really belongs to Folet, of Lille, who devised and performed this operation in the early eighties.

The work of Durante and Novaro, a few years later, also antedates that of the American surgeons. The first extensive collection of the reported cases was made by Labey in 1902, since which time a considerable number of new cases have been reported.

The writer calls attention to the difficulty of differentiating in certain instances between ulcerative colitis and mucous or muco-membranous colitis, and further states that it is only the former type which should be made the object of surgical treatment. Occasionally the cases of chronic ulcerative colitis begin with an acute dysentery, which gradually passes over into the chronic condition. The symptoms in brief are: severe colic; distressing tenesmus; very frequent, often almost continuous evacuations of extremely fetid stools containing blood and mucus; loss of appetite; marked thirst; high fever; pronounced anemia; loss of weight and strength. Such a group of symptoms as the above the writer believes indicates the necessity for surgical intervention.

He has made an exhaustive study of the literature and has collected in all thirty-four cases, four of which are from the Heidelberg clinic. A large proportion of the cases were males, and this he assumes to be the result of the fact that men are more apt to travel in the tropics than women, in which regions many of these cases contracted the disease. Most of the patients were between twenty and fifty years of age, and only one was less than twenty. The indications for operation in the different cases were the marked subjective disturbances, as well as anemia and emaciation.

He divides the cases into three groups: The acute, in which operation was required in six to eight weeks after the onset; the subacute, beginning less severely, but becoming progressively more serious and requiring operation in from three months to two years; and a third group, in which the symptoms were extremely chronic in character, frequently interrupted by longer or shorter intervals of fairly good health, showing a decided tendency to relapse and gradually become more serious.

Of the thirty-four cases five died after operation, but death in every instance except one was due to some cause not directly associated with the operation. The writer believes that a patient must remain perfectly free from disturbance for two years after the operation in order that the case may be said to be cured. This, however, has been true of but comparatively few cases.

The surgical treatment of these cases has two chief objects: (1) to place the diseased portion of the intestine at rest and to keep it free from the irritation of fecal matter; and (2) to treat locally the diseased mucosa of the intestine. Attempts to attain these ends have been made in different ways. In certain instances the ileum has been anastomosed to the sigmoid flexure; in other instances to the rectum; while in still other instances, associated with this anastomosis has been a total separation of the large intestine from the intestinal circulation. In other instances an artificial anus has been established in the cecum; and in still other instances in the ileum; and in one case, reported by Weir, through the stump of the vermiform appendix. In a number of instances an artificial anus has been made in the region of the sigmoid flexure. A comparative study of the results obtained from the different operations indicates that the two which have produced the best results have been, first, the artificial anus in the region

of the sigmoid flexure; and, secondly, the artificial anus in the region of the cecum. Of these two methods, the former seems to have been followed by the better results. It is also apparent that in many instances it is not absolutely necessary to protect the intestinal mucosa from the access of the fecal matter, for this has not been accomplished.

The most important factor appears to be the careful, systematic irrigation of the diseased intestine with a variety of solutions, such as zinc sulphate, boracic acid, bismuth, tannin, silver nitrate and iodine; all of which have been of value in certain cases.

The artificial openings into the bowel are maintained until there is evidence of healing of the diseased mucosa, after which they are either allowed to close spontaneously or are closed by means of operation.

The conclusion is that in serious cases of ulcerative colitis the surgical treatment is to be advised.

The Diagnosis and Treatment of Tuberculosis of the Kidneys. (Zur Diagnose und Therapie der Nierentuberculose.)

CASPER. *Zentralblatt für innere Medizin*, 1904, No. 44.

In 1895 Albert opposed strongly nephrectomy for tuberculosis of the kidney. At the present time, however, the opposite position can be properly taken. The explanation of this change lies in the better recognition of the pathogenesis: (a) the kidney with few exceptions is the primarily diseased organ, although formerly the bladder was so regarded; (b) the other kidney remains healthy up to a certain stage.

Tuberculosis of the kidneys occurs oftener than is commonly believed, as (1) it often runs its course without symptoms, (2) the subjective symptoms accompany many other diseases, and the objective symptoms are similar to those in different conditions, and especially because the haematuria, which is the first symptom, may later be absent for a long period. The most important sign is the presence of the tubercle bacilli in urine, and they are found in eighty per cent. of the cases. If not found, the condition may be determined by inoculation of guinea pigs. Kuster claims that the finding of tubercle bacilli is not absolutely diagnostic, as they may be present without tuberculosis of the kidney, but Orth has shown that this was only in advanced tuberculosis. Nephritis is never unilateral, therefore catheterization would make the differentiation. The kidney is practically always the organ involved. It is usually enlarged, though it may be much smaller and the healthy one compensatorily enlarged. Palpation should always be corroborated by cystoscopy and catheterization. The treatment is surgical or symptomatic and the cases are divided into operable or non-operable. The latter, on account of metastases, extension of the process or amyloid degeneration of the other kidney, give a bad prognosis. Death, however, may be postponed for some years. In 129 nephrectomies without catheterization there were twenty-eight deaths or twenty-one and seven-tenths per cent., where as in the same number with catheterization there were thirteen deaths or ten per cent. The best results depend, therefore, not so much on the technique as on the precise diagnosis made by modern methods of examination.

NEUROLOGY

Edited by Henry Hun, M. D.

A Contribution to the Study of the Cortical Localisation of Vision: a Case of Quadrantic Hemianopia with Pathological Examination.

C. E. BEEVOR AND JAMES COLLIER. *Brain*, Part 11, 1904.

While the investigations of recent years have definitely proved that the cortical half-vision centre is situated mainly if not exclusively upon the mesial aspect of the occipital lobes, the exact limitation of this centre is still a matter of debate. The only other case than the one herein recorded of quadrantic hemianopia from a cortical lesion is the one recorded by Hun, but unfortunately in his case no microscopic examination was made. Cases of quadrantic and of partial hemianopia have been recorded by Henschen, Harris, Anderson, Burns, Reinhard, Foster, Lavisha and Wilbrand. None of these cases afford evidence as to the cortical representation of the quadrants further than that the dorsal part of the visual cortex and the dorsal portion of the optic radiation between this and the external geniculate body are concerned with the lower quadrants and that the ventral portions of both visual cortex and optic radiations are concerned with the upper quadrants. In one of these cases was the lesion confined to the cortex, and in several of them the lesion was limited to some part of the optic radiation.

The case here recorded was under observation for a long period and perimetric examinations were made by several skilled observers. The brain was hardened in formalin and photographs and casts of the occipital lobes were made, several sections and careful projection drawings were prepared, so that a perfect limitation of the lesion was rendered possible.

The patient during the greater part of the period that he was under observation, presented as the sole manifestation of gross nervous disease, blindness of the left upper quadrants of both visual fields, the fixation point escaping. This condition remained constant for about two years. An occlusive lesion of the right posterior calcarine artery was found which caused destruction of the cortex (1) of the right fusiform lobe for its posterior two centimeters, (2) of the right lingual lobe from the junction of the calcarine and parieto-occipital fissures to the pole of the hemisphere, (3) of the whole cortex in the depth of the calcarine fissure, (4) of the greater part of the inferior cuneal gyrus, small areas only at the anterior and posterior limits of this gyrus being free. The necrosis did not involve the optic radiation at any point. The upper two-thirds of the cuneus and the anterior and ventral portion of the fusiform lobe were uninvolved, the lower visual quadrants were unaffected, and until it was pointed out to him, the patient was unaware of the visual defect. The authors submit therefore, that this case affords conclusive evidence that the cortex of the upper two-thirds of the cuneus is the primary visual centre for the lower quadrants. The primary half vision centre is considered by von Monakow to occupy the cortex (1) of the entire lingual lobe behind the junction of the calcarine and parieto-occipital fissure, and (2) the entire cuneus and extending for some half an inch on to the external aspect of the occipital lobe. He thinks that the calcarine fissure probably forms the line of separation of the representation of upper and lower quadrants. In this

connection it is interesting to note that Ramon'y Cajal has traced the axones of the neurones of the external geniculate body to a corresponding area of the cortex in mammals.

The authors direct especial attention to the following points in their case:

(1) The larger part of the lesion was situated below the calcarine fissure; the upper quadrant is chiefly if not entirely represented below the calcarine fissure.

(2) The cortex lining the calcarine fissure was completely necrotic. The primary half-vision centre cannot therefore be limited to the calcarine cortex nor the macula exclusively represented in the anterior part of that region.

(3) The portion of the half-vision centre, as limited by von Monakow, which was not involved, was the upper two-thirds of the cuneus.

(4) The visual defect was blindness of both left upper quadrants. The lower quadrants are represented to a great extent in the upper two-thirds of the cuneus.

(5) The lower quadrants of the visual fields were not affected, and the patient was not aware of any visual defect.

(6) In Hun's case the loss of the lower quadrants was the result of involvement of fibers of the optic radiation coming from the upper cuneus.

Tetany, Pseudo-Tetany and Mixed Forms in Hysteria. (Tetanie, Pseudo-Tetanie und ihre Mischformen bei Hysterie.)

HANS CURSCHMANN. *Deutsche Zeitschrift für Nervenheilkunde*, 27 Band, 3 u. 4 Heft, November 9, 1904.

The author describes and differentiates tetany and the tetaniform conditions, or pseudo-tetany, which occur in hysteria. In the latter disease certain symptoms of tetany, as the facial phenomenon, mechanical superexcitability of the nerves and Trousseau's symptom appear, but are not sufficient for the diagnosis of tetany, which requires Erb's phenomenon, that is, the electrical superexcitability of the motor nerves. He describes cases of actual tetany occurring with hysteria, but when the symptom-complex is incomplete rejects the diagnosis of the former disease. In eleven cases of hysterical pseudo-tetany the various symptoms were represented as follows: In four cases the typical accoucher position of the fingers; in three, the hand was closed in a fist; in one, a spasm in the ulnar musculature; in one, a contraction in the median musculature, sequential upon Trousseau's phenomenon; in two, spasms of extension followed by plantar flexion of the foot and toes. The pseudo-tetanic spasms occurred in all four extremities in six cases; in the hands alone in one case; one hand was affected in three cases, and in these the right hand only. Spasms of the diaphragm occurred in one case, and of the jaw, neck, abdomen and thorax in one case each; spasm of the larynx was noted in one case. The subjective symptoms of pseudo-tetany consisted of severe pain with the spasm in four cases; paræsthesiæ preceding the spasm in two cases; hysterical disturbances of sensation were common; and alterations of intelligence were marked in three. The facial phenomenon of tetany was seen isolated in one case, and with

other symptoms in four cases. Trousseau's phenomenon was present in seven cases. Mechanical irritability of the motor nerves occurred in only one case. Erb's phenomenon was not present in any case.

The author concludes that hysterical pseudo-tetany is a genuine, outspoken, circumscribed, polymorphous disease, which not only presents an imitation of a certain kind of spasm, but has certain original subjective and objective manifestations, which may in part resemble the pathognomonic symptoms of tetany, as shown by the presence of Trousseau's phenomenon; and, in part, may appear sporadically or soon after the attack, as shown by the facial phenomenon and the mechanical excitability of the nerves. But the increase in electrical excitability of the motor nerves (Erb) fails in all cases of pseudo-tetany, and this affords a cardinal differential symptom between this disease and genuine tetany.

Salt Starvation in the Treatment of Epilepsy.

WILLIAM ALDREN TURNER. *Review of Neurology and Psychiatry*, December, 1904.

The suggestion of substituting the salts of chlorine in the dietary of epileptics by the bromide preparations is due to Tonlouse and Richet, who recommended a diet in which the total quantity of sodium chloride *per diem* was limited to one or two grammes. It was thought by diminishing the quantity of the chlorides the bromides might be administered in smaller doses, and the risk of bromism lessened.

Turner selected eight cases who had been under observation for a number of years, and the severity, character and frequency of their fits were well known. The diet consisted of milk, one and one-half litres, pure fresh butter, fifty grammes; three eggs without salt; vegetables, fruit, household bread, 400 grammes; tea, coffee or cocoa, without sugar.

In five of the eight cases a diminution in the total number of fits was observed during the continuance of the diet. In three cases there was a lessened number of seizures during the three months succeeding the diet, but in one of these it was particularly stated that a more marked diminution had occurred in the corresponding period of the previous year, when under no treatment. In three cases the petit mal seizures seemed to have been appreciably increased in number. Although there was some improvement, it cannot be said that the influence upon the mental condition was marked. The body weight increased in four cases, fell in two, and remained stationary in two.

The general conclusions to be derived from the administration of the "salt starvation" diet are: There are some cases of confirmed epilepsy in which the number of attacks is diminished during the continuance of the treatment, and others in which this improvement has lasted after the diet has been stopped. These are the cases in which the bromides are not well borne, or are even deleterious. The mental condition has shown some improvement, but not to the extent that would warrant the indefinite administration of the diet. This amelioration was no doubt largely dependent upon the removal of the bromides and the diminution in the frequency of the seizures. The chief disadvantage of the diet is its monotonous character. As a relief to dyspeptic symptoms it was dis-

tinctly useful. It cannot be regarded as a specific remedy in epilepsy, but merely as a relief to symptoms.

Meningismus Typhosus and Meningotyphoid.

CARL STÄUBLI. *Deutsches Archiv für klinische Medizin*, 82 Band, 1 u. 2 Heft, 12 December, 1904.

Nervous symptoms are so prominent in typhoid fever that the disease has been popularly known as "nervous fever." These symptoms ordinarily consist of depression with difficulty and delay in mental function, not infrequently developing into states of excitement and even delusions. In some cases these nervous symptoms dominate the case when the abdominal manifestations are entirely wanting. Typhoid with purulent meningitis has been established by reports of several cases, in which the complication appeared in the later stages, or during convalescence.

E. Fritz reported, in 1864, spinal symptoms which disappeared by the end of the first week, and it has been demonstrated that these may appear in most outspoken form without a trace of myelitis or meningitis at autopsy. The indications of meningo-typhoid are cervical rigidity, extreme mental dulness, and transitory inequality of the pupils. Eichhorst thought these might be due to hyperæmic or oedematous states of the meninges. In three fatal cases of twelve reported by Wolff, the autopsy showed no meningeal lesions, although the typhoid conditions were fully developed.

In a case reported by Schultze, in which the microscopic findings were negative, the microscope revealed congestion, but in the majority of cases the pathological changes have not been sufficient to account for any symptoms. It is possible that the high temperature and general toxic state may be sufficient cause for the nervous condition, and, although the systemic infection is occasionally not severe, the symptoms may be due to individual susceptibility.

The author reports three cases, illustrating different phases. In the first the result of lumbar puncture was negative, and at autopsy the central nervous organs were normal, although the meningeal symptoms had been severe. The second case presented pronounced cortical motor ataxia, aphasia with meningeal symptoms, from which there was recovery after four days. The prompt restoration is entirely against an organic lesion, and speaks for a toxic state. Bouchat suggested for cases of meningitis outspoken clinically, the term "pseudomeningitis," Schultze, "meningitis without meningitis," and Dupré, "meningismus." Cases of this kind, in which lumbar puncture revealed increased pressure (275 and 200 mm.), with clear normal fluid, have been regarded as due to hyperæmia or oedema of the meninges. In one or two instances papillitis has been noted. Baumgarten and E. Fränkel believe the typhoid bacillus may initiate suppurative meningitis, as do the pneumococcus and meningococcus, or other pyogenic micro-organisms. But the capacity of the typhoid bacillus alone to induce suppuration has not been proved, and suppurative processes are thought to have followed a mixed infection originating in the intestines.

There remains a small number of cases in which the typhoid bacillus has been demonstrated in the central nervous organs. In the author's

third case infiltration of the brain and cord by the typhoid bacillus was shown. There was suppurative cerebrospinal meningitis, and this was due to the typhoid bacillus, and the typhoid bacillus alone. This is an instance of infection by the typhoid bacillus, which may be compared with the cases of so-called toxic "meningismus typhosus," but need not be regarded as contradicting the evidence of cases of mixed origin. The latter are to be regarded as "meningitides with typhoid." The clinical differentiation is important between the functional "meningismus typhosus" and actual meningitis. For the distinction lumbar puncture is available, not only for diagnosis, but as an aid to treatment.

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

Old and New Remedies and Methods in Ophthalmic Work.

MENZIES, J. A. *The Ophthalmoscope* (London), December, 1904.

No organ affords better opportunities for observing the results of treatment than does the eye. The same pathological processes that are found in other organs are to be seen in it; the lids presenting disease of the skin, hair, glands and cellular tissue; the lacrimal passages disease of mucous membrane and of bone; its muscles may be paralyzed or deformed; the conjunctiva is subject to the same diseases as are the other mucous membranes; the sclera to those of fibrous structures, such as the ligaments in joints; the chorioid and iris share the morbid lesions of vascular structures generally; and, finally, the optic nerve and retina are subject to the morbid changes to which the nervous system, generally, is exposed. The morbid processes comprised under the name "rheumatism" are, perhaps, never better appreciated by a physician than when he is besought by a patient, who wants rapid action in treatment, to cure, out of hand, a case of episcleritis; this with special reference to the reality, chronicity and obstinate resistance to treatment, of such processes. Here we have the disease, as it occurs in fibrous tissues, visible to any one, with its apparent simplicity, persistence and its aggravating habit of attacking a fresh spot just when the physician is congratulating himself that the cure is in sight. Albuminuric retinitis shows the characteristic lesions of Bright's disease in forms more susceptible of observation than when the same degenerations occur in concealed organs.

The author cites silver nitrate, belladonna and mercury as the three remedies that constituted the main *materia medica* of a bygone generation of ophthalmologists. To-day, despite the array of remedies with which organic chemistry has provided us, we could ill afford to dispense with these three.

As to the first of them, Darier justly says that a garland should be woven for him who introduced silver nitrate into eye-work. When properly used, it constitutes one of the most trustworthy local applications in three grades of conjunctivitis—the simple form, ophthalmia in infants and the gonorrhoeal variety. A solution of proper strength must be used, it must be used in the right way, just often enough and, finally, one must know just when to stop the use of it. Generally speaking, a two per cent.

solution is the most useful and it should be applied on a camel's hair pencil, to the everted lids, with care that the remotest folds are reached. The surplus should be washed away with simple water. In a case of ordinary catarrhal conjunctivitis, which is not readily remedied by alum or zinc sulphate, one application of silver, along with other appropriate treatment, suffices to effect a cure. In infantile ophthalmia daily applications are necessary, until the purulent discharge is markedly diminished and the eye can be kept open. In gonorrhoeal cases, whether in infants or adults, it may be necessary to use the silver twice daily. If the applications are too long continued or the solution is too strong, the result will be a drying of the mucous lining of the lids and the production of a viscid, yellow discharge.

The author describes a form of corneal ulcer that he says is not sufficiently considered in text books, that begins as a sort of phlyctenule at the margin of the cornea and goes across to the opposite edge of the cornea; this, he says, he has always succeeded in curing by the application of the mitigated caustic.

The author adds the somewhat astonishing statement that "in ordinary phlyctenular disease, yellow oxid of mercury ointment is an absolute specific, and silver is quite unnecessary."

The modern substitutes for silver nitrate are said to be legion; of these are named eight of its organic salts, among which the author chooses argentamin and protargol as the only ones threatening to supplant the nitrate. No mention is made of argyrol, which many leading ophthalmologists now prefer to any other form of silver. This part of the article concludes with the somewhat surprising statement that "it seems tolerably certain that protargol is destined to replace silver nitrate almost entirely in eye work."

Leaving out of account its physiological use in optometric examinations, there is only one indication for the use of atropin, *viz.*, the prevention of adhesions of the iris to the lens. In other words, atropin should be used only in iritis or where there is danger of iritis, as in deep ulceration of the cornea. Five modern products are mentioned and alleged to be substitutes for atropin, each with its own field of action; the paragraph concerning these concludes with the statement that "for ordinary work, the supremacy of atropin is unchallenged."

Adrenalin has been extensively used in eye operations, but is coming to be recognized as a not unmixed blessing. Bleeding, at the time, is avoided, but it is more than annoying to find, after a cataract extraction or a glaucoma iridectomy, at the time of the first dressing, two days later, that the patient is temporarily blind, because of the anterior chamber being filled with blood. The operation wound being closed by lymph, this blood must remain where it is until it is slowly absorbed. The author holds that the advancement of a rectus tendon is the sole eye operation in which the use of adrenalin is of real value. In this case the absence of blood enables the surgeon to adjust the tendon in its new position more accurately than would be possible if bleeding were present, and subsequent slight hemorrhage is not important.

The author can not condone its use in the treatment of conjunctivitis, unless the cause of the inflammation is, at the same time, otherwise

attacked; he would rather attack causes than symptoms and, therefore, even in cases of hyperemia, would hardly commend the use of adrenalin, which, he says, is a confession of helpless ignorance.

Dionin is declared to be likely to be of much value in eye diseases. Its first and obvious effect as an application to the eyes (which effect, however, it does not produce in entirely healthy persons) is a marked chemosis, the vessels being so dilated and the lymphatics so distended that the cornea appears sunk in the middle of the swollen conjunctiva. If a strong (five per cent.) solution is used, the lids, also, may become swollen and tense. At the same time, although it has no anaesthetic action, it is a pronounced analgesic and banishes the pain of acute glaucoma or iritis, not for a minute only but, it may be, for twenty-four hours. It is said even to cure a case of acute glaucoma, for the time being. It is said to aid the action of atropin or eserin. The author has used it in cases of keratitis, as an adjuvant to atropin, but he is convinced that such cases are better treated by atropin alone or by cocain and atropin. The effect of dionin is to facilitate cure on nature's own lines, whereas adrenalin acts in just the opposite way. Tolerance of dionin is soon established so that one per cent. solutions can be used without the consequent production of chemosis. In a case of keratitis, for example, it is better to use dionin and atropin for a few days, then atropin alone, then dionin again, and so on.

As to mercury, it is unnecessary to emphasize its value, not alone in syphilitic cases, but also in other diseases, in which no syphilitic taint can be traced. If, however, the modern investigator can not find something new, he can, at least, find a new way to use the old. The last method of using mercury is to inject it under the conjunctiva. As this is a painful process, acoin has been discovered; although this has no local, anaesthetic effect on the human cornea, it is said to render hypodermatic or subconjunctival injections almost painless. The author confesses to a preference for the old-fashioned method of administration, unless the evidence in favor of the injections is of the strongest description. So far, it does not seem to him convincing. Sir Douglas MacLagen once gave him a bit of advice that he has remembered and valued. Menzies had said that a part of the treatment of belladonna poisoning was the hypodermatic injection of morphia; to which MacLagen responded: "Why a hypodermatic? There's no hurry! Remember the natural channels. There is far too great a tendency on the part of young medicine of to-day to rush to the hypodermatic needle!" In cases of iritis and the like, in which mercury is used, it is more than probable that what is seen in the eye is only an indication of what exists in many, unseen, similar structures, such as the chorioid plexuses, and, if that is so, the reason for the concentration of attention on the eye is greatly weakened. There is no doubt that subconjunctival injections are somewhat terrifying to the patients, even though they can be made painless; partly for that reason and partly because of the expense of having each dose administered by the doctor, it seems to Dr. Menzies impracticable to adopt such measures as a regular thing.

In certain cases, such injections would not only be justifiable but even advisable; such a one would be that of an eye going rapidly to destruction

as the result of sympathetic disease or an infective ulcer, in which experience shows that ordinary treatment will almost certainly be unsuccessful; in this case the subconjunctival injection of the cyanide of mercury should be made.

One thing which renders doubtful the advantage of such injection of mercury is that all the merits claimed for it have been likewise claimed with equal assurance for similar injections of sodium chloride. On the whole, it seems prudent to wait for further information on the subject.

The Effect of Radium Rays on Healthy and on Blind Eyes. (Ueber Radiumstrahlen und Ihre Wirkung auf das gesunde and blinde Auge.)

R. GREEFF. *Deutsche medizinische Wochenschrift*, 24 March, 1904.

A Professor London, of St. Petersburg, had published, in a political newspaper of Vienna, an article, the translation of whose title is, "Hope for the Blind." The article aroused some hope, among the blind, leading them, in consequence, to spend what Greeff calls their "sourly earned" savings, on journeys to St. Petersburg, in order to see again. Some authority was given to Professor Greeff, of the *Charité* eye clinic in Berlin, to investigate the matter. The article under present consideration is his report, to the Berlin Medical Society, of such investigation. His first difficulty was to obtain enough radium, which, at that time, cost one hundred thousand times as much as pure gold. That obstacle having been overcome, he next ascertained the effect of radium on the healthy eye. The fact about radium which is of chief and unprecedented importance is that it perpetually shines or gives out light in a place otherwise dark, and that without loss of weight or substance. Such light has two distinct effects or qualities: first, that it causes certain substances to become fluorescent and second, it is itself given off by radium. Professor London failed to distinguish between these two. When radium is brought near a burium platinocyanide screen that is, otherwise, in absolute darkness, the screen becomes fluorescent, giving the observer an impression of a beautiful, diffuse illumination; in such a case, the radium being hidden from him, he is seeing no direct radium rays. The light that he does see is subject to the laws of ordinary light. The real radium rays may be seen by bringing the radium, in a leather covering, to a distance of about ten centimeters from the eye, which is first permitted to adapt itself to darkness.

The leather covering is used because it is not susceptible of the influence of radium to make it fluorescent. The eye then is conscious of a peculiar seagreen light; the nearer the radium is brought to the eye, the more intense does this light become. The person seeing such light is unable to project it, that is, to know if its source is above, below, to the right or left. As to this, Greeff's and London's opinions are mutually contradictory. Such rays penetrate the eye in any direction and through any of its tissues, indifferently. Whether the radium is in front of the eye or at the temple, is immaterial. The rays pass through the bones as readily as through muscle. Even a coin is no obstruction to their passage. The author notes this difference between Roentgen rays and those from radium. As explanatory of this light perception, it has been suggested

that the crystalline lens is made fluorescent by the radium, and, the retina being thus stimulated by rays from the lens, light is perceived. Greeff experimented with fresh pigs' eyes, with proper precautions against fluorescence of the coverings of the radium, and detected, with certainty, a faint fluorescence. That radium can also affect the retina directly was shown by its bleaching visual purple in the dark. When the author comes to consider the effect of radium on blind eyes, he says that we lack an exact definition of blindness; he mentions the various ways in which the word blind is understood and says that, when the retina can no longer perceive, or the optic nerve conduct, light, that eye is hopelessly blind. He says Professor London defined blindness of the patients discussed in the article first mentioned above, as that which prevented their ever having seen lightning. Greeff says that radium has no effect at all on eyes of which such a statement could be truthfully made. Patients whose vision is nearly nullified by corneal opacities, may be somewhat helped by placing objects between them and a screen that is rendered fluorescent by radium, since corneal opacities do not hinder the passage of the rays from such a fluorescent screen. Such light, is however, very limited, since rays of that kind cannot be refracted, and consequently no true images can be formed by them on the retina. In Greeff's experiments, large metallic letters, keys, crosses, and the like were seen by the relatively blind eyes under observation. The same kind of sight might be gotten, however, by the use of similar screens and the use of a kerosene lamp as a source of light, since the light perceived was not that of radium, but emanated from the barium screen. The author points out Professor London's logical fallacies, in the article in the Vienna paper, and holds that he ought to have more scientifically considered the matter before publishing his views.

Congenital Aniridia (Aniridia congénitale).

GALEZOWSKI. *Recueil d'ophtalmologie*, March, 1904.

This abnormal condition is of very rare occurrence. Moissonier found records of but twenty-four cases. The article now under consideration gives three of Galezowski's own cases. Two of them were those of a woman and her son. Each of the mother's eyes was totally devoid of iris, had a cataract, nystagmus and paresis of its external rectus muscle, while its acuteness of vision amounted only to perception of fingers at twenty centimeters. In the case of her son, all these were present except the external rectus' paresis, in each of the eyes, the aniridia, however, not being complete. His left cataract was limited and the fundus of that eye visible, showing that no disc atrophy or pigmentary degeneration existed. In these two cases none of the lenses were subluxated nor was the tension increased. The third case was that of a girl of four years. Her aniridia was total in each eye. Polar cataract was present in the left eye, but vision was good, especially in the right eye. Double ptosis existed. The tension was normal, there was no subluxation of the lens and no nystagmus. The author and Von Ammon agree in ascribing aniridia to arrested development rather than to an intrauterine, pathologic process.

ALBANY MEDICAL ANNALS

Original Communications

SYMPOSIUM ON CEREBRO-SPINAL MENINGITIS.

Read before the Medical Society of the State of New York, at the Annual Meeting held in Albany, January 31, 1905.

I

THE PATHOLOGY AND BACTERIOLOGY OF ACUTE MENINGITIS.

By WILLIAM T. COUNCILMAN, M. D.,

Boston, Mass.

Under the term meningitis is understood inflammation of the pia arachnoid, the investing membrane of the brain and spinal cord. The brain covered by this membrane projects into the subdural space as the heart projects into the pericardial cavity. The membrane contains numerous blood vessels and lymphatics which pass from the membrane into the brain. The lymphatics are situated in the adnential sheath of the veins and arteries, and are not continued into the walls of the capillaries.

All cases of meningitis are cerebro-spinal, and strictly speaking, probably all deserve the term of meningo-encephalitis. The relations between the brain and the investing membrane are so close that careful examination of cases of meningitis will always show some extension from the membrane into the brain tissue. Infectious agents can gain access to the meninges by means of the blood, by lymphatics or by the extension of infectious processes from adjacent regions. All forms of meningitis agree more or less anatomically, although there are, however, certain minor differences which are in most cases sufficient to differentiate between the various forms. The same character of exudation may be

produced by the diplococcus meningitidis, the pneumococcus, the streptococcus and even the tubercle bacillus.

Acute meningitis may be produced by a number of bacteria, generally to those belonging to the pyogenic organisms. The three organisms most usually concerned in the process are the diplococcus intracellularis meningitidis, the pneumococcus, and the streptococcus. The type of meningitidis produced by the diplococcus intracellularis meningitidis is that known as epidemic cerebro-spinal meningitis. The disease exists both in epidemic and in sporadic cases. The mortality is less in this form of meningitis than in the other forms, and appears to be less in sporadic cases than in epidemics.

An investigation of the autopsies at the Massachusetts General and the Boston City Hospitals since 1897 has shown sixty-one autopsies on meningitis. Twenty-one of these were of the epidemic form. With rare exceptions, all cases of primary meningitis are due to the diplococcus intracellularis.

We have no definite means of determining the frequency of these sporadic cases. Our experience is that the disease is more often not recognized when present than the reverse.

The organism has been found in the nose associated with acute rhinitis. It is very possible that the affection of the meninges takes place by means of lymphatics connecting the nose with the brain. The evidence which we have justifies us in the conclusion, that there is a form of meningitis produced by the diplococcus intracellularis meningitidis, that the epidemics of acute meningitis are due to this organism, that sporadic cases are not infrequent, that with rare exceptions primary cases of meningitis are due to this organism, that recovery takes place much more frequently in this type of disease than when infection is due either to the pneumococcus or the streptococcus, that the disease is more common than is generally supposed, that the organism does not live as a saprophyte outside the body, that the organism may be found on the mucous membrane of the nose where it may produce a rhinitis, and it is probable that infection of the meninges takes place by extension from some of the adjacent mucous membranes by means of the lymphatics.

Eighteen of the sixty-one cases were due to the pneumococcus. In one of these cases the affection appeared to be primary in the meninges, but there was an accompaniment of acute nephritis, which suggests a preceding acute infection.

In six cases the infection was secondary to otitis media and mastoiditis, in one secondary to an infection of a tumor of the sphenoid, in one case associated with the streptococcus secondary to fracture of skull and operation, in one secondary to abscess of prostate, in one case secondary to acute infection of ethmoid, "the pores of right cribriform plate contain fibrinous pus in continuity with exudation about right olfactory lobe," in two cases secondary to acute croupous pneumonia and in four secondary to acute bronchopneumonia and pleurisy, in two cases secondary to acute pneumococcus endocarditis. In but few of these cases did the infection appear to be embolic, in most the extension to the meninges was by continuity or by lymphatics. In its general pathogenic properties the pneumococcus attacks tissues from mucous surfaces and extends in the body by surfaces. I believe that the frequency of pneumococcus meningitis is greatly overestimated, and especially its frequency secondary to pneumonia.

There were eighteen cases of streptococcus infection and in one the infection was primary. In seven cases secondary to fracture or operation wound of the skull, in eight cases secondary to otitis media and mastoiditis, in one case secondary to acute streptococcus endocarditis, and in one secondary to acute bronchopneumonia and acute cystitis. We see from this analysis that in the two hospitals mentioned fatal sporadic cases of meningitis are equally divided between the three organisms which are to be regarded as the main aetiological factors. Of the remaining four cases, two were produced by the staphylococcus aureus, one secondary to trauma with following operation and one secondary to empyaema. In two the nature of the infection was not determined. In one of the cases published in 1898, the meningitis was produced by the anthrax bacillus and was secondary to a primary lesion on the face. We have never had any cases due to the typhoid bacilli.

In all cases of epidemic cerebro-spinal meningitis examined, there was extension from the meninges into the brain consisting of purulent infiltration around the vessels sometimes accompanied with the presence of organisms and an increase of the neuroglia of the cortex. In certain cases foci of diffuse gliosis were found in the white matter of the brain at a distance from the cortex. The disease has further a greater tendency to extend along the cerebral nerves than any of the other forms of

meningitis. A peculiar form of pneumonia may also accompany the disease, taking the form of small foci of consolidation in the lung which are probably embolic in origin. Eight such cases of pneumonia were found in the course of the epidemic reported in 1898.

The meningitis due to the pneumococcus and streptococcus has a peculiarity in that the inflammation is accompanied by an acute proliferative inflammation of the veins and arteries. This is more marked in pneumococcus infection than in streptococcus. We have not found this lesion in the meningitis due to the diplococcus meningitidis.

II

SYMPTOMS AND DIAGNOSIS OF CEREBRO-SPINAL MENINGITIS.

By HENRY L. ELSNER, M. D.,

Professor of Medicine, Syracuse University.

In considering the symptoms and diagnosis of cerebro-spinal meningitis as a part of the Symposium in which it is my privilege to participate today, I shall limit myself mainly to the rehearsal of experiences with this dread disease in the central counties of New York State. Two facts are noteworthy:

First. There is not a single year when cerebro-spinal fever fails to claim its victims in Central New York.

Second. The disease may be either sporadic or epidemic. A search of the vital statistics and hospital reports proves the truth of the first statement. We are reminded by these statistics that individual and rare experiences are often readily forgotten. In the city of Syracuse there have been 175 deaths during the past eleven years due to cerebro-spinal meningitis; 499 have died of meningitis. The deaths during this period were reported as follows:

Cerebro-Spinal Meningitis		Meningitis	Cerebro-Spinal Meningitis		Meningitis
1893.	11	55	1899.	45	43
1894.	4	61	1900.	13	29
1895.	17	61	1901.	9	23
1896.	18	51	1902.	19	32
1897.	12	51	1903.	8	22
1898.	19	71			
				175	499

During these years there were no large epidemics of the disease. The majority of cases were considered sporadic, either primary or secondary. In 1899 there were a few house epidemics; the disease existed also in a limited area without attacking many. The records of St. Joseph's Hospital in the city of Syracuse show that there were twenty-four cases of cerebro-spinal meningitis admitted from January, 1894 to October, 1904 with sixteen deaths, a mortality of 66 $\frac{2}{3}$ per cent. It is interesting to note that during the year when there were forty-five deaths in the city of Syracuse, the larger number probably epidemic, not a single case of cerebro-spinal meningitis presented for admission to St. Joseph's Hospital and that this was the only year during many when our wards were free from the disease. Through the kindness of Drs. Darlington and Guilfooy of the Department of Health of the Borough of Manhattan I am able to show the continuous presence of the disease within the city of New York. The number of deaths from cerebro-spinal meningitis is as follows:

Year 1894.....	213	Year 1901.....	201
" 1895.....	204	" 1902.....	210
" 1896.....	178	" 1903.....	195
" 1897.....	232	* " 1904.....	1010
" 1898.....	258		
" 1899.....	287	Total.....	3189
" 1900.....	201	*January 1st to November 1st, 1904.	

The high mortality during 1904 was due to the prevalence of the disease in epidemic form. This epidemic did not reach Central New York.

During years when epidemic cerebro-spinal fever has spared the central counties, non-epidemic cases have dotted our cities and country districts indiscriminately. The disease claims the larger number of its victims from the homes of the poor; yet it is not infrequently found in homes where sanitary conditions are good. There have been but few serious epidemics of cerebro-spinal meningitis in Central or Northern New York. When present, the number of cases have been surprisingly small; these showed no continuous extension, while the mortality has been discouragingly high. The disease has been held within a narrow precinct of the city or a corner of the country township. So infrequent

have serious and extensive epidemics been that there are among the Nestors of the profession living in Onondaga County today only two or three who recall more than one severe epidemic and that in 1855 and 1856, the most fatal visitation of the disease ever experienced in Central New York, in which many were attacked. The central counties of the State were invaded. As a rule, when epidemic cerebro-spinal meningitis has visited this country, the same surprises have been in store for us as have been noted by foreigners, in the remarkable limitation of its ravages, the small number originally attacked, always with a high mortality. These facts were well illustrated in the epidemic form of the disease on board the U. S. Receiving ship, Minneapolis, as reported by Surgeon Stokes in the Report of the Surgeon General, U. S. Navy, 1903. The ship was overcrowded with 1,450 men on board at the time of the outbreak, yet only twenty-three cases developed; of these six died, an unusually low mortality of twenty-six per cent.

Epidemic cerebro-spinal meningitis is due to the meningococcus of Weichselbaum, a fact which was promptly corroborated in this country by Councilman and others. It has been demonstrated both clinically and experimentally that pneumococcus cerebro-spinal meningitis and meningitis are more virulent than are those forms of the epidemic disease due to the meningococcus. Heubner says: "The benign nature of the meningococcus as compared with the virulence of other meningitis producing germs, accounts for the comparatively few cases during epidemics, their ready control with the subjugation of the germ." Sporadic or non-epidemic cases are likely to run a much shorter and more fatal course than do those of meningococcus origin. Netter makes the statement that pneumococcus meningitis is almost uniformly fatal. Of sixty-eight cases, sixty-one died during the first days of the disease. Only one-third of the meningococcus cases died. The majority of these run a protracted, often irregular and even an intermittent course. Some continue weeks and months. There are exceptions to this behavior as was exemplified by an epidemic of the disease as it raged in a corner of the town of Cicero about thirty-three or thirty-four years ago. The cases were met in the practice of the late Dr. Blynn. There were a number of families living near each other; all children infected attended the same district school. Death claimed its victims within the first twenty-

four hours of the disease. There were no sporadic cases. With but few exceptions the disease was confined to children. The few who lived long enough had the classical symptoms of epidemic cerebro-spinal meningitis and those who recovered had sequellae which relegated some to a mattress grave, some were robbed of their hearing or sight, while others recovered with less serious damage. This was before the days of bacteriologic diagnosis, but the behavior of the epidemic and its comparison with those of today justify the conclusion that it was of the meningococcus variety and that occasionally this is found malignant—prompt in claiming its victims. Such a “lightning” course has been experienced since the days of lumbar puncture and has been confirmed by accurate bacteriologic diagnosis, but is exceptional. The fatality of the disease, its sequellae, with final permanent damage to vital organs and the special senses in a large number of those who live, have led the lay-world and the profession to fear the infection, whether epidemic or sporadic. There are cases so mild, it is true, that they may originally escape detection; some of these are recognized only, or suspected, when the disease has attacked others more violently in the same house or neighborhood.

Another interesting fact which has been noticed in Central New York is the presence of other infectious diseases of the nervous system during the prevalence of even limited epidemics of cerebro-spinal meningitis. On three occasions within the past ten years we have met cases of cerebro-spinal meningitis, acute poliomyelitis anterior and Landry's paralysis almost side by side, in which the diagnosis of each was positive.

Cases of poliomyelitis anterior, occurring endemically, have, in the middle counties of the State, been present with a limited number of undoubted meningococcus meningitides. This has not always been the rule. A limited epidemic of poliomyelitis anterior was found in Oneida county in the practice of Dr. Huntley in which there were no other cases of infectious nervous disease. Those found bore no resemblance to cerebro-spinal meningitis.

House epidemics of the disease in which from two to five members of a household were attacked, and these without further spread of the disease, have been met on five different occasions.

Cerebro-spinal meningitis is rare after the fortieth year. In

sporadic cases occurring in adults, mental strain and long continued worry may prove inviting factors. Eichhorst reports two epidemic cases hastened, he believed, by mental fatigue. Sporadic cases offer no positive subjective symptoms which differentiate these from those of epidemic origin. *Bacteriologic and cultural tests only give information which insure safety and give that protection to which we are at all times entitled.* One attack probably gives immunity. Councilman found but five cases in which the disease showed itself twice in the same individual.

There are unexplainable factors which modify the severity of both forms of the disease during different years and materially influence its course. With sporadic as with epidemic cases, all degrees of severity are found. In all forms of cerebro-spinal meningitis, *opisthotonos* is rarely absent; so constant is this symptom that the Germans have named the disease "Genickstarre."

The *headache* of cerebro-spinal meningitis is almost always severe. Its persistence and appreciation by the patient as consciousness departs and while merging into deep coma becomes impressive. We cannot easily forget the persistent groan and occasional shriek when the sensorium to all appearances seems thoroughly blunted.

General *hyperesthesia* is the rule.

Photophobia is usual. *Pressure upon nerve trunks* is usually painful, often causes the patient to shriek and may give rise to general contractures or tremor.

The *facies* of the patient and characteristic *position in bed* with rapid wasting of muscle and fat, with legs drawn in anomalous positions are not easily simulated by other diseases of the nervous system.

The *knee jerk* is absent in one-sixth of all cases. In one-tenth this phenomenon is absent to reappear during convalescence. In a number of cases the deep reflexes have been exaggerated. In some these have been slightly decreased. The variation in the behavior of the reflexes in different cases proves that these follow no rule.

Insomnia is almost always present.

Respiration may be increased, *bronchial catarrh* becomes a frequent complication. Sudden temporary cessation of respiration (Biots' respiration) or Cheyne-Stokes breathing may some-

times be present, though less frequent than in tubercular meningitis.

The *pulse* and *temperature* offer nothing characteristic other than the acceleration of the former and the elevation of the latter. As death approaches, the pulse becomes exceedingly rapid, due to vagus paralysis.

Hyperpyrexia has characterized some cases. Some of these have been of the foudroyante type, ending in a few hours.

The abdomen is retracted in the majority of cases, constipation is the rule.

The *urine* continues to be secreted in good quantities, albuminuria is usual, glycosuria occasional. *Pressure along the spine and occiput* continues exquisitely painful almost to the end of the disease.

The *skin* supplies a number of lesions in *herpes*, *erythema*, *roseola* and *hemorrhage*. *Herpes labialis* is less common as a symptom of epidemic cerebro-spinal meningitis than either *roseola* or *hemorrhage*. *Herpes facialis* is more frequent in Germany than in this country. Ziemssen says, "In no other disease have I observed facial herpes which spread so widely." It is present early, there are repeated crops, its presence is of no prognostic value. *Hemorrhage* which has given to the disease the name, "spotted fever," a misnomer, is not always present and in some cases seen in Central New York, was absent. Large cutaneous hemorrhages and bleeding from mucous membranes are ominous, indicating malignancy. The *cerebral macule* has been early and persistent in most cases.

Convulsions are rare in adults. Children, particularly the very young, are likely to begin the disease with tonic spasm. *General epileptiform convulsions* have occasionally been present.

Tonic spasm limited, without full convulsions is quite characteristic of the beginning posterior-basic meningitis of the English, which Lees and Barlow describe in Allbutt's system. The majority of these are undoubtedly cases of cerebro-spinal meningitis. A thorough study of the fifty post-mortem reports appended to the article mentioned shows that the spinal membranes were involved in twenty-six of these cases; in eight the cord and membranes were found normal; in sixteen of the cases the cord was not examined, or no mention is made of such examination, while in two of the twenty-six cases in which the

spinal membranes were involved, only the upper inch or two of the cord was examined.

Vomiting has characterized the cases in which there has been an unusually long prodromal period. It is less common than in tubercular meningitis, although it may be present at any time before the final deep coma of the average case. *Conjunctival redness* with oedema and, at times, chemosis, are common. The lips and tongue are dry and cracked, while sordes accumulates on the teeth as in typhoid. *The eye and ear symptoms* will be considered separately in this symposium. As a rule, the blood shows a marked polynuclear leukocytic increase, ranging from 9,000 to 24,000. Tubercular meningitis rarely gives evidence of marked leukocytosis. A few cases have been described in which this has been found (Osler, Rieder and Zappert).

Metastatic joint inflammation was found in three cases of which we have records. When this occurs early its differential diagnosis from acute rheumatism and pyemia may present difficulties. In one of our cases, a woman aged twenty-four, the early symptoms were limited to the ankle joints. There was hyperpyrexia, severe headache, rapid development of opisthotonus which cleared all doubt. This patient died in the second week of the disease of purulent cerebro-spinal meningitis with suppurative changes in all joints involved. Fronz and Osler have called attention to this complication in elaborate and valuable articles. Both observers found meningococci in the joints.

Splenic enlargement is usual, the spleen is not as large or easily palpated as in some other acute infections.

The Kernig phenomenon is present in almost all cases of cerebro-spinal meningitis. If the patient is made to sit up or nearly so and an attempt is made to extend the leg, a marked contraction of the flexor tendons is felt in the popliteal space with inability to straighten the leg. Kernig in his original article makes the following statement: "This phenomenon is so striking, the difference between nothing and something, between the complete absence of the contraction while the patient is lying down and its presence when the patient sits up, is so plainly perceptible that it is well worthy of consideration and special attention should be paid to this symptom, its presence looked for in all cases." In fifteen cases of meningitis Kernig found this phenomenon present. In eight of these the diagnosis was confirmed post-mortem. Of the fifteen cases, thirteen were epi-

demie cerebro-spinal meningitis. This sign is not limited to meningitis, it is occasionally present with other diseases. In six of Kernig's cases, not meningitis, but with brain symptoms with pial trouble, the phenomenon was more or less marked. Kernig believes that it is an early manifestation, as early as opisthotonus, and that it is late to disappear.

In considering the importance of this phenomenon in the diagnosis of cerebro-spinal meningitis, it must be conceded that but few cases have been found in which it could not be demonstrated early and in which it did not continue until the end of the disease. However, as a differential sign in grave infections, such as pneumonia and typhoid fever in which all symptoms may be masked during several days because of the presence of brain symptoms, its presence and possible persistence may become misleading. Thus we have found cases of pneumonia in which the Kernig phenomenon was present with and without associated changes in the brain. Our experience at St. Joseph's Hospital during the past few months strengthens the conclusion that the phenomenon is absent, as a rule, in cases in which the meninges are not involved, but that it is not always present with meningitis. Dr. Harris kindly examined for me 121 patients at St. Joseph's Hospital including sixty-one medical and sixty surgical cases. In only one of these did he find the Kernig phenomenon, that a case of tubercular meningitis. In three cases of meningitis included in this number the Kernig phenomenon was absent. One of these followed a fracture at the base of the brain, the second proved to be purulent cerebro-spinal meningitis with brain abscess, opisthotonus was marked, the third followed a fracture at the base of the brain with associated apex pneumonia. In ninety per cent of the cases of cerebro-spinal meningitis seen during the past six years we found the Kernig phenomenon present. Friss of Copenhagen reports sixty cases of cerebro-spinal meningitis in fifty-three of which he found the Kernig symptom, *i. e.*, eighty-eight per cent. Netter's experience is of value. He reports twenty-five cases of meningitis including twelve of epidemic cerebro-spinal meningitis in which the Kernig phenomenon was present in twenty-three or ninety-two per cent. Kernig, Henoch and Netter have called attention to the value of this symptom in clinching the diagnosis of cerebro-spinal meningitis, even during the period of convalescence in cases where the disease was not originally suspected and where

the diagnosis of the disease in other members of a family was aided by its persistence. Herrick's experience in nineteen cases including nine of the epidemic form of the disease showed the presence of the Kernig phenomenon in seventeen cases or 89.4 per cent. In none of these cases was it needed to make the diagnosis positive. Lewin reports twenty-nine cases of meningitis in which the phenomenon was present in twenty-one. Its early presence with few brain symptoms has, on several occasions, created a strong suspicion of cerebro-spinal meningitis. Such a case was seen with Dr. Joy at Cazenovia in which the Kernig symptom was present early with increasing headache without opisthotonus, stupor or vomiting. Depending upon this symptom with headaches, cerebro-spinal meningitis was strongly suspected and finally developed. In two cases seen in private practice with few or no added classical symptoms early, the Kernig phenomenon has been of diagnostic value, creating a strong suspicion at least of approaching cerebro-spinal meningitis. We must emphasize the fact that the suspicion is only strengthened in these cases, for the Kernig phenomenon is by no means pathognomonic of cerebral or cerebro-spinal meningitis and that it is often absent in meningitis as our experience at St. Joseph's Hospital proves. Taken alone, its value may be over-estimated; when used as a link it adds great strength to the diagnostic chain.

LUMBAR PUNCTURE.

The subarachnoid space is the only hollow in the body which normally contains an appreciable quantity of fluid. Thus, the brain and cord are suspended without anywhere coming in contact with their bony covering. This fact makes it possible for the clinician, in the majority of cases, to follow the manoeuvre of Quincke and withdraw this fluid, by means of a trocar and canula from the lumbar region for close macroscopic and microscopic examination, staining and cultural experiments.

In considering the value of lumbar puncture in the diagnosis of cerebro-spinal meningitis I would call attention to two underlying facts:

(1) The normal pressure within the subarachnoid space is increased.

(2) The fluid is materially changed and as a rule holds the specific microorganism responsible for the meningitis.

Thousands of punctures cautiously made have proven the

possibility of determining in an overwhelming number of cases the nature of the underlying infection. The macroscopic appearance of the fluid withdrawn has led some observers, whose experiences have been large, to conclusions which ought not be accepted by the inexperienced without confirmation, either by microscopic examination or cultural experiment.

Lichtheim, Frohmann, Schiff, Pfandler and Lange believe that flocculi or coagula which precipitate from the fluid are characteristic of tubercular meningitis. On the other hand Stadelman refuses to subscribe to this view. The majority of observers have formulated the rule that with purulent cerebro-spinal meningitis the fluid is turbid and contains pus; that the absence of flakes from the fluid (Stadelman, Orglemeister) does not argue against the possibility of a tuberculous process, nor is their presence positive evidence of tubercular meningitis. Serious errors will be made if we depend upon the macroscopic examination of the withdrawn fluid alone. Orglemeister reports an unfortunate experience in which the diagnosis of meningitis with abscess of the brain, correctly made, was changed to tubercular meningitis because the fluid contained fibrinous flakes with increase of leukocytes but without microorganisms or tubercle bacilli. The post-mortem proved the correctness of the original diagnosis: cerebro-spinal meningitis with abscess in the left temporal lobe. Polynuclear leukocytes may be taken, when found in the lumbar fluid, as pointing strongly to the purulent form of cerebro-spinal meningitis and to non-tubercular disease. The experiences of Wentworth, Pfandler, Widal Ravout, Monod and Sicard strengthen the diagnosis of tubercular meningitis when there is mononuclear leukocytic increase. Lymphocytosis of the withdrawn fluid, therefore, argues against ordinary sporadic or epidemic cerebro-spinal meningitis. Macroscopic and microscopic examinations of the withdrawn fluid can ultimately serve only to strengthen suspicions. The greater and scientific value in the differential diagnosis of the various forms of meningitis, cerebral and spinal, must depend upon the demonstration of the specific organism. This lumbar puncture enables us to do in a large majority of cases, proving its utility, not only as a means of diagnosis, but for prognosis and treatment of the disease under consideration.

Prophylactic measures must of necessity follow accurate bacteriologic diagnosis in this as in other contagious infections

Failure to find, on staining, in the withdrawn fluid, tubercle bacilli or other meningitis producing germs with positive evidences in symptoms of cerebral or cerebro-spinal meningitis may occasionally postpone accurate differentiation. Cultures of meningococci and pneumococci may be grown in from twenty four to forty-eight hours; tubercle bacilli in from ten to fourteen days.

Hansemann in his recent publication (*Lehrbuch der klinische Untersuchungsmethoden*, 1904, Eulenberg, Kolle und Weintraud) says: "Lumbar puncture has been largely practiced during recent years. There have been hundreds, yes thousand of these. I do not believe that there are many cases in which diagnoses made, after painstaking observation, have been materially modified by this manoeuvre or in which the therapy of the individual case has been directed along new lines. Considering," Hansemann says, "still further, the anatomic relations of the cerebral and spinal membranes and the 'complication of conditions,' a positive find may be of value for diagnosis. A negative result justifies no conclusions. To depend upon lumbar puncture for a hurried differential diagnosis of a purulent meningitis may become impossible for in such a condition there may be no or only a few leukocytes in the lumbar fluid. If we decide the diagnostic worth of lumbar puncture we must remember that with hemorrhagic pachymeningitis, blood may be absent, that at times the fluid may be bloody from puncture of a vessel, that tubercular meningitis may give fluid (*occasionally*) free of cells and even bacilli." Hansemann further says, "In general, I believe that lumbar puncture is more a method for the clinical institute than for use in general practice." We do learn the nature and microorganic cause of cerebro-spinal meningitis in the majority of cases by such procedure. We acknowledge the fact that the knowledge gained by lumbar puncture is not needed in all cases of cerebro-spinal meningitis. It becomes important whenever, for the protection of the masses, the true cause of the disease demands demonstration, or whenever the positive differential diagnosis during the life of the patient depends upon the information which it alone can give. Negative results will continue disappointing. Positive finds, when needed, prove exceedingly satisfactory. Netter has gone so far as to hold, as a result of his observations, that two conditions are necessary for the positive diagnosis of epidemic cerebro-

spinal meningitis: (1) the Kernig sign; (2) lumbar puncture to show the presence of the disease producing organism.

If, as Councilman and Eichhorst claim, so-called sporadic cases become foci from which epidemic cerebro-spinal meningitis may spread, the knowledge gained by the thorough bacteriologic study of the individual case may be the means of protecting entire communities against the ravages of this disease. Lumbar puncture is not a procedure for the novice or the careless. It demands skill, cleanliness and judgment, as well as infinite patience. The clinician needs the aid of the bacteriologist in its practice. Such helpmates are being supplied in all parts of our State as promptly as they are demanded by the intelligence and scientific spirit of the profession.

With either sporadic or epidemic cerebro-spinal meningitis *mixed infection* is not uncommon; occasionally the pneumococcus may be found with the Friedlander bacillus and the meningococcus may have abundant companionship before death or recovery.

(1) *The pneumococcus as certainly causes cerebro-spinal meningitis as it does, malignant endocarditis and both of these fatal infections without pulmonary inflammation.* The infection is malignant, the clinical picture is characteristic; cerebral, spinal and peripheral symptoms are abundant. Early death is the rule. These cases are less frequent than are those with associated pneumonia.

(2) *Cases of cerebro-spinal meningitis with pneumonia in Central New York have been uniformly fatal.* It is exceedingly difficult to diagnosticate this complication in the majority of cases. Timely and frequent lumbar punctures offer aid which may prove conclusive. Nauwerck reports seventeen cases, each with post-mortem, and adds twelve cases from the literature of this subject—twenty-nine in all. All of his patients were over twenty years of age. He calls attention to the latency of meningitis in pneumonia, recognized post-mortem only, as a rule. Netter also mentions this latency while Osler, in his splendid Cavendish Lecture on cerebro-spinal meningitis says, "Of the cases I saw in Montreal I remember but one in which the diagnosis was made during life." With opisthotonus, the Kernig sign, general rigidity and advancing pneumonia the mind has remained clear in some cases. This behavior, however, was exceptional. About one-half of the cases seen by the writer

have presented no spinal symptoms. In other cases wild delirium with subsultus, strabismus, opisthotonus and the Kernig symptom have been followed by coma, high fever, rapid, irregular small pulse and death. Repeated lumbar puncture in these cases is necessary to prove the presence of meningeal infection. The respiratory and circulatory symptoms may not be materially changed. The original leukocytic count may remain unchanged or slightly increased as meningitis develops. Pneumonias are repeatedly met in which cerebro-spinal involvement is strongly suspected by the presence of many of the symptoms mentioned in which no change in brain or cord are found post-mortem. Especially difficult is the diagnosis of sporadic or epidemic cerebro-spinal meningitis as a complication of alcoholic pneumonia in which there may have been pre-existing or accompanying wet brain with delirium, marked rigidity and general hyperesthesia. Meningococcus pneumonia may complicate cerebro-spinal meningitis. Thus, Councilman, Mallory and Wright in the presence of both these conditions found the meningococcus present in eight of ten cases. In the other two the pneumococcus was found.

(3) *Pneumococcus meningitis may follow distal infection.* During the past ten years we have had three cases at St. Joseph's Hospital in which cerebro-spinal meningitis of pneumococcus origin have followed. The first was after removal of the upper teeth, the second after otitis media, the third after a transverse fracture at the base of the brain. We have notes of two fatal cases of cerebro-spinal meningitis which followed nasal operations, once after the removal of a nasal polyp, the second after removal of bony masses. Pneumococci were found in the nasal secretion. This was before the days of lumbar puncture. Besides the pneumococcus, streptococcus pyogenes, staphylococcus pyogenes and the influenza bacillus have been found with the meningococcus in the lumbar fluid and pus. Heubner reports fourteen cases of tuberculous meningitis, in two of which he found with meningococci, tubercle bacilli. Fubringer reports a case of cerebro-spinal meningitis dependent upon gonococcic infection. Pfuhl and Walter have called attention to the association of the Pfeiffer influenza bacillus with other meningitis producing germs, while Peucker, Donath and Wasserman call attention to cerebro-spinal meningitis dependent upon the influenza bacillus alone. Wasserman's case was con-

clusive in proving the presence of the bacillus in the lumbar fluid. Saguepee and Peltier strengthened by their clinical and bacteriologic studies, described a grippal form of cerebro-spinal meningitis.

Symptoms due to complications are dependent upon extension of the primary or mixed infections or upon consecutive structural changes. These cannot be fully considered at this time. So numerous are these and so far reaching their results that chapters have been written in their consideration.

The consideration of the *differential diagnosis of conditions resembling cerebro-spinal meningitis* is manifestly impossible within the time limit of this paper. Few errors will be made by the cautious who are willing to associate painstaking bedside examination with the knowledge gained from laboratory methods. These errors will be limited, if past experiences are repeated, to tubercular meningitis, cerebral typhoid, the pneumonias, intestinal infections, rheumatism with cerebral symptoms and smallpox. The long prodromal period of tubercular meningitis, the absence of leukocytosis in the majority of cases, the paralyses in the domain of the third, fourth and seventh nerves with other basilar symptoms, the absence of other cases, and the knowledge gained by lumbar puncture, will brand the case as one of tubercular meningitis. The greater rigidity and opisthotonus will always be found associated with cerebro-spinal meningitis. The differentiation of malignant scarlatina in foudroyante cases will continue speculative. The differentiation of smallpox will not puzzle long. Osler reports one such failure. The presence in variola of mononuclear lymphocytosis with the assistance gained from lumbar puncture, the Kernig sign and the characteristic umbilication of the vesicle will suffice in most cases.

An interesting experience which I have recently had with Dr. Randall of Liverpool, brings to my mind a series of typhoid cases in which the symptoms during the first four to seven days are those of cerebral or cerebro-spinal fever. The case to which I refer was a young man over twenty who, during the first week of typhoid, had with delirium, opisthotonus, the Kernig symptom, rigid muscles and violent headache, cutaneous and general hyperesthesia with cerebral macule, no diarrhea but retracted abdomen, temperature 103°, pulse 120, respiration 24. On

the sixth or seventh day the Widal agglutination was positive. With that day ended the symptoms of cerebro-spinal involvement. Another similar case, a child aged only seven months was seen with the late Dr. Winslow of Ithaca four years ago. During the first week of the disease the diagnosis of cerebro-spinal meningitis seemed justified because of the usual symptoms of that disease. By the seventh day the spleen became palpable and enlarged. Abundant roseola with a crop of sudamina covered the abdomen. The position of the child in bed was that of cerebro-spinal meningitis. The Widal agglutination was positive on the tenth day. After this all evidences of cerebro-spinal meningitis faded, the babe merged into the usual typhoid condition which was followed by a slow convalescence without sequel. The child was infected from the mother's breast. The latter had a mild ambulatory typhoid, unrecognized until a positive Widal reaction was found during the child's illness.

Cases of typhoid fever in which the first week simulates cerebro-spinal meningitis are extremely difficult of recognition. Others have called attention to these anomalous forms of typhoid. Thus, Curschmann, in 1886 reported five similar cases from which he concluded, "that it is surprising to find a condition scarcely mentioned in medical literature in which with a final characteristic course of abdominal typhoid the disease begins with all of the symptoms of a true cerebro-spinal irritation which disappears after the first week of the disease." A search of medical literature shows that Fritz, a French physician, called attention to these cases in 1864, and proved that none of them showed change in the brain or cord on post-mortem examination. Staubli reports three cases and makes a plea for the classification of these as meningismus typhosus or typhoid without lesions of spinal or cerebral meningitis, but with all of these symptoms during the early days. Typhoid toxins must be charged with producing this mimicry of true meningitis. The longer period of prodromal symptoms, the greater enlargement of the spleen, the greater likelihood of intestinal manifestations, the absence of leukocytosis, the sterile lumbar fluid, the Widal agglutination, all strengthen the suspicion of typhoid.

That there are occasional cases of cerebro-spinal meningitis dependent upon typhoid infection cannot be safely denied. My own experience offers no pathologic data to prove the truth of this statement. Koenig reports two cases with normal pressure,

demonstrated by lumbar puncture, one recovery and one death. In the first he diagnosticated oedema and profound congestion; in the second the post-mortem confirmed the association of the two diseases. Both pathologists and clinicians are disagreed on the ability of the typhoid bacillus to produce suppurative changes. Moring's conclusions during the Crimean War in 200 typhoid autopsies with microscopic sections, in which there had been profound cerebro-spinal symptoms, never showed the presence of suppurative changes in exudation or pus corpuscles. Holscher, in 2,000 typhoid autopsies, found eleven cases, *i. e.*, five per cent, with suppurative meningitis. Murchison denied the possibility of pus formation associated with acute typhoid inflammation, referring probably to extra intestinal lesions. I might cite a large number of authorities (quoted by Staubli), proving beyond peradventure the occasional association of cerebro-spinal meningitis with typhoid in which the typhoid bacillus was the only pathogenic organism present, found in the lumbar fluid and post-mortem. The last of these comes from the Munich clinic, and is reported by Staubli. His methods included all possible ante-mortem and post-mortem refinements of diagnosis and demonstrate the fact that the typhoid bacillus may cause purulent cerebro-spinal meningitis. The splendid illustration of the article adds to its value and makes it convincing. There is no time during an active typhoid in which symptoms of deep involvement of the cerebro-spinal system may not develop. To determine whether these have a foundation in pathologic change in the cerebral or spinal membranes will often prove exceedingly puzzling.

III.

TREATMENT OF CEREBRO-SPINAL FEVER.

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In reviewing the treatment of cerebro-spinal fever we have to consider the management of a self-limited infection of known etiology and great mortality, with a death rate that differs widely in different epidemics. To begin with, we have to confess that the sanitarian, as relates to this disease, is more useful than the therapist. The study of epidemics shows that overcrowding, bad ventilation and drainage are largely responsible for the transmission of the affection. A striking illustration of this

is shown in the experience of Surgeon C. F. Stokes of the Navy (*Record of the Surgeon-General of the Navy*, 1903, p. 229). An epidemic occurred on board the ship *Minneapolis* whose normal complement is 500 men, but which at the time of the outbreak, carried 1,450. The disease developed for the most part on the main deck which was especially overcrowded and lacking in ventilation, whereas in the less crowded parts of the ship the disease made little headway. While this view does not explain sporadic cases developing under apparently good hygienic conditions, there is convincing evidence that isolation should be resorted to wherever possible. Much might be added in support of this apparently self-evident view of the subject. The problem is a familiar one in epidemiology.

Formerly the treatment of the disease consisted in the early employment of blood-letting, either general or local, the use of mercurials in repeated and rather large doses, ice locally, the employment of opium and other cerebral sedatives. In this country the extraction of blood found little favor, and most physicians were content to use mercurials in moderation. Cerebral sedatives, on the other hand, were constantly employed, generally for the relief of the symptoms, pain, coma and convulsions. Of these, opium, as recommended by Stillé, was most largely employed, while others preferred full doses of bromine salts and others antipyrin or chloral. The application of ice to the head and along the spine, or counter-irritation at the nape of the neck with the internal use of ergot, found favor with many.

These measures still have advocates, and there remains a question as to whether their use is to give way to more modern methods. Amongst the plans of treatment which have of late years attracted most attention, the foreplace must be given, first, to the hot bath as recommended by Aufrecht; second, to spinal puncture and drainage as practiced by Quinke, with or without irrigation of the spinal canal with antiseptic solutions and other medicinal agents; and, third, subcutaneous injections of corrosive sublimate.

It seems necessary briefly to review the present status of these methods. First, the hot bath treatment. Aufrecht in 1894 (*Therap. Monats.*, vol. 8.), reports a sporadic case, in coma, for about eleven days, with weak pulse, subnormal temperature, and grave danger of collapse, in which he ordered the baths at forty-eight degrees Centigrade (104° to 106° Fahr.), continued

for ten minutes. After the first bath the symptoms improved the pulse became stronger, with decrease of headache and stiffness of neck, and a return to consciousness. The treatment was continued for twelve days, after which the cerebral symptoms disappeared.

Worschiliski (*Therap. Monats.*, vol. 18, 1895), following the experience of Aufrecht, treated two cases by the hot bath treatment, also employing drugs. In the first case the baths were begun on the eighth day. The same striking improvement was seen as in Aufrecht's cases; that is, an improvement in the pulse, in the comfort of the patient and decrease in the stiffness of the neck and headache. After the eighth bath, the symptoms practically disappeared. Besides the baths he employed calomel, 0.06 four times a day, enemata, potassium iodide, unguentum hydrargyri and leeches. In the second case the baths were begun on the sixth day. The first was followed by general improvement, the patient sleeping the first time during the illness. The baths were repeated twice daily at the patient's request. On the twelfth day they were discontinued because of the appearance of pericarditis and arthritis of the left side. The headache and other symptoms reappeared so that the baths were resumed on the eighteenth day and continued for three days longer, when the symptoms disappeared and recovery slowly followed. This writer concludes that the hot baths are not contraindicated in pericarditis.

Jerwin (*Therap. Monats.*, vol. 10, 1896), reports five cases in which he followed Aufrecht's method with recovery in each case, and says that the indications for their use are subnormal temperature, small, weak pulse, and threatened collapse, headache, stiffness of neck and nervousness. He believes that the baths are without danger.

Wolisch (*Therap. Monats.*, vol. 10, 1896), adds the report of seven cases in children treated by Aufrecht's method, with five recoveries and two deaths, a mortality of twenty-eight per cent. He states that one fatal case was fulminating, and that in the other, owing to the objections of friends, the treatment was omitted until too late in the course of the disease. This author believes that hot baths lower the temperature, quiet the nervous symptoms and improve the heart tone.

Netter, before *La Societe Medicale des Hopitaux de Paris*, 1900, reports seven cases all of which showed the presence of

diplococcus intracellularis, in which he combined the treatment of hot baths in conjunction with lumbar puncture. There were five complete recoveries, one with resulting ankylosis in two joints following arthritis, and one in which the result was doubtful. He continued the baths for twenty minutes, and repeated them every three hours.

Turner in his Paris letter (*Therapeutic Gazette*, July, 1900), mentions eleven cases of his own in which seven recovered and four died, a mortality of fifty-seven per cent. But of the four fatal cases, three were under treatment but one day before death.

Schlesinger, Anhauch and Steckel (*Wiener Med. Woch.* vol. 46, 1896), report a number of cases in which the hot pack had been used apparently with relief of symptoms, but with a mortality varying from thirty to forty per cent.

Urban (*Wiener Med. Woch.*, vol. 47, 1897), reports six cases with a mortality of fifty per cent., but believes that the hot bath treatment, Aufrecht's method, serviceable in the relief of symptoms.

E. Blavot (*Centblt f. Bacter.*, July 12, 1901), says that Aufrecht's method combined with lumbar puncture has proved in his hands almost invariably successful even in severe cases. When the condition is grave, he would prolong the bath to twenty-five minutes, and recommends its use every three to four hours day and night, the patient being moved in a blanket. He considers the lumbar puncture of great assistance in diminishing the intra-cranial pressure as well as removing toxic substances. In conjunction he would use salt-transfusions, calomel and opium internally and iodoform locally.

Aufrecht's method does not appear to have been widely practiced in this country, although in a recent discussion before the American Medical Association it was stated that repeated hot baths were recommended and somewhat widely employed as early as 1873 in some portions of this country, and that their use was attended with considerable success. It will be noted that the method of employing hot baths as to duration and frequency varies considerably with different clinicians, and that in some instances the treatment was associated with the employment of drugs. Reports favor the hot bath treatment, and yet the high mortality rate given in some reports is not to be forgotten. Apparently the practice is harmless, is generally followed by the

relief of symptoms, and in some instances at least apparently has had a favorable effect upon the course of the disease.

Concerning the treatment of lumbar puncture, Seagers (*Lond. Lancet*, 1902), reports thirty-one cases in which this method was practiced, followed by injections of from nine to twelve cubic centimetres of one per cent. lysol solution. There was a mortality of forty-two per cent., but he explains that the patients were from the lower classes and in bad condition, and occurred in the Lisbon epidemic of 1901-1902. He compares the results with the early treatment by hot baths which gave a mortality of sixty per cent., with simple lumbar puncture in twenty cases which gave a mortality of forty-five per cent., eleven cases with puncture followed by injections of oxy-cyanide of mercury which gave a mortality of fifty-nine per cent. The author also refers to the Oporto epidemic of 1901, giving a mortality of sixty-one per cent.

Morris Manges (*Medical News*, May, 1904), reports three cases treated by intraspinal injections of lysol solution with recovery in each case. He expresses the opinion that lumbar puncture is superior to the hot bath of Aufrecht. He uses ten cubic centimetres of the one per cent. solution of lysol. He believes in children the dose should be from three to nine cubic centimetres.

Nammack (*Med. Record*, June, 1904), reports five cases in which he employed intraspinal injections of fifteen cubic centimetres of ten per cent. lysol solution, explaining that the solution employed was through a misunderstanding stronger than he intended. Of the five cases, four died, a mortality of eighty per cent. However, in the same epidemic with various forms of treatment, of twenty-nine patients admitted to the Bellevue Hospital, twenty-four died, a mortality of ninety per cent.

Koplik (*Med. News*, vol. 84, 1904), believes that lumbar puncture is not curative, although most advantageous in diagnosis. He consents to its use for the relief of pressure symptoms. He points out that it is unfortunately unavailing in cases with extreme retraction of the neck with rigidity, the very cases in which its employment would be most indicated to prevent the danger of sudden dilatation of the ventricles. This author quotes Osler, Connetti, Treves and Smith as advising lumbar puncture for the relief of pressure symptoms.

Quincke (*Berl. Klin. Woch.*, 1895), in his original report on lumbar puncture reports its effect on fifty-three cases from which he withdrew from three to sixty cubic centimetres on an average of twenty cubic centimetres of cerebro-spinal fluid, and considers that it has a therapeutic value in the relief of pressure symptoms. He compares its effect with that seen after aspiration in pleural effusion.

F. H. Williams (*Boston Medical and Surgical Jour.*, vol. 137, 1897), after reporting this form of treatment in thirty-nine cases in the Boston City Hospital, with a mortality of fifty-nine per cent., concludes by advising lumbar puncture for early diagnosis and for the relief of pressure symptoms.

Councilman, Mallory and Wright (*American Journal Medical Sciences*, March, 1898), report that no ill-effects were seen from a large number of spinal punctures made in the Boston epidemic, and quote Williams as believing that the practice is sometimes positively beneficial, referring to a state of quiet and sleep following the operation.

Antony (*Archives de Medicine et de Pharmacie Militaire*, Paris, vol. 42, 1903), after referring to its importance as a diagnostic measure, speaks of the utility of lumbar puncture in the treatment, claiming for it the lessening of pressure symptoms and more rapid defervescence, the disappearance of hyperesthesia and, in some cases, a marked curative effect. He reports five cases of his own with recoveries, two cases without good effect, and two cases still undecided. He quotes the statistics of Chapault, Babinski and Bernard, as reflecting favorably on the effects of lumbar puncture.

Joseph Collins thinks that puncture has little effect in ameliorating the disease (*Twentieth Century Practice*). From these reports it may be learned that the mortality in cases treated by lumbar puncture, or in which lumbar puncture has been practiced for diagnostic purposes, or in which, following lumbar puncture, injections of various antiseptics have been employed, differs but little from the mortality following other lines of treatment.

The treatment by subcutaneous injections of corrosive sublimate is highly recommended by Angyan (Bela) (Abstract from *Medical Record*, vol. 53, 1898). His plan is to inject subcutaneously along the spinal column .01 of corrosive sublimate in the case of adults, and from .0005 to .005 in children, once a

day. In severe cases the injections are repeated as often as the fever, headache and stiffness in the neck continues. In sub-acute cases the injections are practiced until the temperature disappears. He reports twenty-seven cases thus treated with a mortality of thirty per cent.; the infections, varying in number from four to twenty-four, were as a rule well borne. In most cases after the second or third injection, the mind became clearer, excitability was allayed and the pain less marked, so that the patient could sleep. After the fifth or sixth injection, the mind usually cleared up and sleep was still quieter and of longer duration. He did not hold that the treatment shortened the disease, but that it favorably modified its course.

Dazio and Consalivi (*Semaine Medicale*, abstracted from the *Journal of the American Med. Asso.*, vol. 26, 1896), report nine cases treated by this method with eight recoveries. The diagnosis was not confirmed bacteriologically.

J. D. Smith (*Jour. A. M. A.*, vol. 26, 1896), reports six cases in which he injected one-fourth to one-fifth grain doses hypodermically, with recovery in each. The diagnosis was not confirmed by bacteriological examination.

On the whole the evidence in favor of this method of practice cannot be called conclusive, to say the least. Miscellaneous measures of treatment which seem worthy of consideration are, first, the opium treatment so strongly recommended by Stillé, Whittaker (*Reference Handbook Medical Sciences*), and a host of others, finds its indication through its anodyne influence, thus sparing the nervous system until the force of the toxin is abated.

A. Steiner recommends ten grains of gum opium at a dose when convulsions are severe, and has found no stupor to result. Chauffard and Boudin from seven to fifteen grains; Stillé one grain every hour and von Ziemssen morphin hypodermically in sufficient doses.

Nearly all practitioners admit the occasional use of opium, but as will be seen there is the greatest difference as to the dose and the indications. Perhaps an equally large number prefer bromides in large and repeated doses. With some this is regarded as the sheet anchor in the treatment of the disease. In connection with bromides, antipyrin is advocated, and has been serviceable in relieving headache, lowering temperature and lessening hyperesthesia. Ergot has been used extensively either

alone or with bromides, and like other remedies has found its advocates, while most continental authorities seem to think that mercury in some form or another, usually in large doses, is a necessary method of treatment no matter what else is done. In spite of this array of therapeutics we find that the mortality continues large.

Antony, before referred to, has collected 508 cases with a mortality of 339, between sixty-four and sixty-five per cent.

When we recollect the difference in virulence in different epidemics, it is easy to understand how faulty notions as to the effects of measures of treatment may gain credence. Nevertheless, a timely review of the subject would seem to warrant the conclusion that benefit does follow certain of these measures, and from my own point of view, I should conclude that the most useful procedure is the bringing about of the best hygienic condition for the patient; that is to say; first absolute quiet in well-ventilated, darkened rooms, with the absence of all excitement and irritation; second, giving the greatest attention to secure the proper performance of the various functions of the body; third, the trial of the hot baths after the method of Aufrecht in all cases where they seem to do good; fourth, the practice of intraspinal puncture, with drainage where necessary to relieve severe pressure symptoms, to be repeated, if necessary, provided benefit follows the first puncture; fifth, the use of antipyrin in cases in which the temperature is raised, not only for the relief of this symptom, but for the mitigation of headache and hyperesthesia. Personal experience has shown me that the drug is also useful in improving the mental state, and it has not been followed, in my hands, by the expected depression; sixth, the use of opium or the bromides alone, or in connection with antipyrin, if necessary for the relief of convulsions, pain, hyperesthesia and pressure symptoms generally, which are not relieved by the foregoing methods of treatment; seventh, the use of mercury when needed for its laxative effect, or needed to assist in stimulating the organs of elimination.

IV

THE EYE SYMPTOMS OF CEREBRO-SPINAL MENINGITIS
(Abstract.)

By A. EDWARD DAVIS, M. D.,

New York City.

The eye symptoms in cerebro-spinal meningitis may, for the convenience of consideration, be divided into two groups—*Motor* and *Visual*. As is well known the eye symptoms in cerebro-spinal meningitis vary in different epidemics. For instance, one epidemic may be marked simply by a conjunctivitis of a more or less severe character¹; in another the chief eye symptom may be a plastic or suppurative choroiditis²; in another the cornea may be the seat of affection³; while in another the optic nerve and retina may be the chief points of trouble⁴; nystagmus is frequent in some epidemics⁵.

In my experience as attending ophthalmic surgeon to the Babies' Wards at the Post-Graduate Hospital, I have examined the eyes in from fifteen to twenty sporadic cases of cerebro-spinal meningitis every year, and I may say the eye symptoms have varied widely in these sporadic cases. In some there were no eye symptoms whatever, in others only a mild conjunctivitis, while in others neuroretinitis, iridochoroiditis, or various disturbances of motility, singly or in combination, have been present. Last year, 1904, late in the winter and extending into the spring months, we had an epidemic of cerebro-spinal meningitis in New York city, and I had the opportunity of examining some thirty odd cases in the wards of the Post-Graduate Hospital. Thirty-one cases in all were examined by me, some once and some many times.

Since all epidemics of cerebro-spinal meningitis have one or more eye symptoms of a like nature, I shall first consider any and all the eye symptoms that may occur in epidemic cerebro-spinal meningitis, and then give a detailed account of the eye symptoms observed by me in the epidemic of 1904 in New York City.

Motor Symptoms. These may be: paralysis of the third nerve, partial or complete, sixth nerve, fourth nerve, ophthalmic division of the fifth nerve, seventh nerve, from pressure on the nerve trunks; and conjugate deviation, nystagmus and ptosis, from cortex lesions.

Visual Symptoms. These may be: optic neuritis, neuroretinitis, perineuritis, opticatrophy, plastic and suppurative chorioiditis, panophthalmitis, photophobia, conjunctivitis, keratitis.

A few or many of the above eye symptoms may be present in cerebro-spinal meningitis; at times, however, no eye symptoms at all are to be observed.

In the epidemic of cerebro-spinal meningitis in New York city, 1904, in the thirty-one cases observed by me, the most prominent symptom was that of neuroretinitis. This occurred in eight cases. In seven of these cases both eyes were affected; in one the right eye alone. In one case the neuroretinitis was complicated with contracted pupils; in one with convergent squint and seventh nerve paralysis; in one with conjunctivitis and keratitis. Four died, two were cured and two discharged because of complicating contagious diseases.

Conjunctivitis was present in eight cases. In every case where there were conjunctival symptoms a smear was taken and a microscopical examination made.

Koch-Week's bacillus was found in two, staphylococcus in one, diplococcus in one, staphylococcus and diplococcus both in one, gonococcus in one, pneumococcus one, and in one the examination proved negative though in this case the lumbar puncture proved positive, the diplococcus intracellularis being present.

One case was complicated with convergent squint, one with dilated pupils, and one with keratitis and neuroretinitis, four died, two were cured and two discharged on account of intercurrent contagious disease.

In none of the cases except the one with the gonococcus infection was the conjunctivitis of a severe nature; and in no case was there oedema of the lids, not counting the gonococcus infection.

Pupils. In three cases the pupils were affected; in one the pupils were very small, mild neuroretinitis complicating; in one the pupils were dilated, a conjunctivitis complicating; in one the pupils were unequal, in this case no fundus examination was made, the parents taking the child away. Both cases remaining died.

Venous Congestion of Fundus. In two cases there was marked dilatation and tortuosity of the retinal veins, while the optic discs were greatly congested but without swelling, no other eye symptoms; one died and one recovered.

Paralyses. Two cases had convergent strabismus, one complicated with a conjunctivitis, and one with seventh nerve paralysis and neuroretinitis. Both recovered.

Keratitis. This was present in one case complicated with conjunctivitis and neuro-retinitis. The patient died.

Irido-Choroiditis, left eye. *Primary Optic Atrophy*, right eye. This very interesting case is still under observation, and warrants a brief note of the case—M. R. aged two and a half years, gave the following history. Dec. 26, 1904. Two weeks ago complained of being tired, developed a fever, went to bed, went to sleep and has remained drowsy since. Complained of pain in the head and has cried a great deal in last week. Dec. 27, first examination. Right pupil contracted and irresponsive to light or convergence, no redness, a greyish white reflex from fundus. Left eye normal. Ordered atropin instilled into right eye. Dec. 28, right pupil did not respond to the atropin. The iris is bound down to the anterior capsule of lens, tension minus two. Jan. 4, 1905, right eye pupillary margin of iris is bulged forward in cone-shape. Tension minus three. Slight subconjunctival injection. Still a grayish reflex from fundus. Jan. 11, Right eye, the pupillary margin of iris is almost in contact with the posterior surface of the cornea; eye very soft, but there is only the slightest congestion, no sight. The disc in the left eye is pale. Jan. 25, the right eye same as before. In the left there is decided paleness of the disc. The child is improving. Highest temperature 104 degrees Fahrenheit. and lowest ninety-eight degrees. Pulse 110-140.

The Significance of Eye Symptoms in Cerebro-spinal Meningitis as Regards Prognosis and Diagnosis.—The diagnosis in epidemic cerebro-spinal meningitis as a rule, may be made from the general symptoms, *e. g.*, the vomiting, irregular temperature, headaches, retracted head, Kernig's sign, spinal irritation, petechial or herpetic eruptions, which taken together, with lumbar puncture and microscopic examination, make the diagnosis positive. But in a few cases the general symptoms are not well marked and the eye symptoms, especially where there are changes in the fundus, serve to clear up the diagnosis. Inequality of the pupils, especially if accompanied with squint, should place the general practitioner on his guard. I am not unmindful of the difficulty and at times the impos-

sibility of making a satisfactory examination of the fundus of the eyes in children, but as many of the symptoms in meningitis are motor in character, that is, paralysis of the different eye muscles, pupillary changes, ptosis, etc., all of which may be observed without the use of the ophthalmoscope, ignorance of the use of which instrument most general practitioners give as an excuse for not making proper examination of the eyes, it is the more to be regretted that the eyes do not receive earlier and more careful attention. I may state that since the introduction of the electric ophthalmoscope in the last few years, the examination of the fundus of the eye can be made easily, while the child lies in bed, and even by one not experienced in use of the ophthalmoscope. The light in these instruments always moves with the instrument and it is an easy matter to keep the fundus illuminated, particularly where the pupil is dilated, either with atropin or by the disease.

The *prognosis* in these cases where there are eye lesions, especially where the fundus is affected, is always more grave than in those cases where there are no fundus lesions. In the epidemic observed by Randolph*, in the six cases where optic neuritis was a complication five died, and the other one was alive when last heard from. In the five cases followed to a close every one died, or 100 per cent.

In the epidemic observed by myself, in eight cases of neuroretinitis, six of which were seen till close of disease, four died and two recovered, or 66.6 per cent of deaths. Where there were no eye symptoms whatever, there were fifty per cent of deaths.

Such statistics speak for themselves and need no comment.

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2. J. H. KNAPP, *Centralb. für med. Wissenschaften*, No. 33, 1865.
3. WILSON. *Dublin Quart. of Med.*, Vol. xliii, 1867, p. 302-6.
4. RANDOLPH. *The Johns Hopkins Hospital Bulletin*, No. 32, June and July, 1893, also in the epidemic in N. Y. C. and reported by me in this paper.
5. LEICHENSTERN. *Deutsch med. Wochen.*, No. 31, 1885.

V. DISCUSSION

Dr. MORRIS MANGES of New York said that he wished to emphasize with Dr. Councilman, as he had already pointed out, that cerebro-spinal meningitis was not simply a meningitis involving only the spinal meninges but the cerebral meninges and cortex as well and if this fact was born in mind one could readily see how hopeless any attempt at treatment was. It was important to remember the variations pointed out, the variations in mortality in different epidemics, and this certainly modified

* Loc. cit.

enthusiasm over any one plan of treatment. If one could see that picture of thick tenacious false membrane which covered the spinal cord and base of the brain in many instances he could premise the hopelessness of any therapeutic agent. Even after one had apparently rescued a case the danger of sudden death should be born in mind, as from acute dilatation of the ventricles, *i. e.*, acute hydrocephalus, which might occur as long after the disease as six weeks. Such a case was seen at the Mt. Sinai Hospital. Lumbar puncture was of value in his opinion if the foramen of Magendie was not closed; it was the closure of this foramen that explained the hopelessness of treatment, locally, in many instances. Yet some attempt should be made in local treatment in every instance. The systematic use of lumbar puncture had been a great aid in diagnosis as well as in treatment; if it did no more than aid in the differential diagnosis it had fulfilled a great and important object. A great many cases were apparently cured by lumbar puncture, many were not affected and yet in no case had it been known to do harm when properly performed. Anyone in acquiring the proper technique should be prepared to get "dry tapping" and this was not always due to faulty technique; it might be explained by the thickness of the membrane, or by the closure of the foramen of Magendie. He said he was surprised to learn how tolerant the spinal canal was of antiseptics, such as lysol, and other foreign substances. Yet it should be born in mind that if the foramen of Magendie was closed no form of local therapy was of value. Again if there was thick false membrane to deal with no local therapy was of value. In those cases where failure followed lumbar puncture, or the injection of antiseptics, such as lysol, one could attempt to drain the canal by making a counter-opening above; then with the lumbar puncture below one might get some good result. The results from the use of lysol were better than Dr. Stockton's paper indicated. In the cases reported originally, 123 in number, there were fifty-eight per cent. of recoveries. Whether these cases recovered as the result of treatment must be, of course, received with proper reserve. Dr. Morris referred to a severe case of cerebro-spinal meningitis treated by Dr. Loomis at Bellevue Hospital with a solution of argyrol; at autopsy the silver salt was found to be distributed not only in the spinal canal but also over the cortex and base of the brain; therefore, there was some promise of success by antiseptic injections when the foramen of Magendie was open. The hot water treatment he believed to be good but anyone who had seen a severe case of this disease would recognize the fact that it was not an easy thing to administer such a treatment. These patients may lie there in opisthotonos, or curled up, and they hate to be disturbed. If there was no undue irritability the routine use of hot bathing with friction applied, as in the treatment of typhoid fever patients, was to be recommended. But if there was much irritability this, of course, could not be carried out with benefit. Dr. Manges referred to a rash that he had frequently seen in these cases about the joints, which might be best described as a gooseskin rash, and instead of white areas, it appeared as though the margin of the epidermis had been rubbed off and a rough surface left with bleeding papillae. The occurrence of this rash about the knees and elbows might be of value in

establishing a diagnosis. In some cases difficulty was experienced in making a differential diagnosis between this disease and uremic and diabetic coma. A well marked nephritis with the characteristic acute nephritic urinary findings was quite common in cerebro-spinal meningitis and might be among the earliest symptoms and cause much confusion in diagnosis. The presence of sugar in the urine in the early stages of the disease was quite a common occurrence and might be misleading, especially at the onset.

Dr. DELANCEY ROCHESTER of Buffalo said that what Dr. Councilman had stated regarding the encephalitis was a very important point. One should bear in mind too the fact that all cases of primary infection of serous membranes were accompanied by a certain amount of involvement of the underlying structures, *i. e.*, those that were covered by the serous membrane in question. These epidemics he said occurred at a time when people were shut up in their houses, away from the fresh air, and when the vitality of the individuals was lowered. This enabled the various micro-organisms to increase and secure a foothold and develop the disease. Too much stress should not be laid upon the value of Kernig's sign, nor upon any one sign or symptom; symptoms should be grouped together for diagnosis of this disease. A point not mentioned by any of the readers he said was the persistent leucocytosis in cerebro-spinal meningitis from the beginning to the end. Lumbar puncture was of value in withdrawing fluid and relieving to a certain extent the pressure within the spinal canal, but the injection of these irritating substances, such as antiseptics, was of doubtful efficacy. The question arose in his mind whether the injection of antiseptics into *any* serous sac was of any value, or did more than act as an irritant there; he was satisfied that such was the case when these substances were introduced into the pleura or pericardium. In the treatment of these cases he emphasized the importance of keeping the patients quiet and the room dark and the patient away from any source of irritation. His practice had been to be persistent in the use of bromides and antipyrin in combination, using them at three or four hours intervals and in considerable doses. The persistent use of these sedatives enabled one to move the patient with greater ease, as in giving hot baths. He also emphasized the importance of attending to the emunctories. The local treatment was of value, such as the application of leeches along the base of the skull and along the spine.

Dr. E. LIBMAN, of New York, said that one of the most important things to be considered to-day was regarding the methods by which cerebro-spinal meningitis spread—what caused epidemics of the disease. Was the disease due to the diplococcus of Weichselbaum or not? Taking sixty cases at the Mt. Sinai Hospital there were found nineteen due to the tubercular bacillus, seventeen to the streptococcus, seven to the pneumococcus, three to the staphylococcus aureus, two to the micrococcus of Pfeiffer, two to the bacillus pyocyaneus, etc. Therefore, no one organism cause the disease apparently, or if it did, it was not yet discovered. He referred to a case of a child that had been treated for "pink-eye," who later developed cerebro-spinal meningitis, and he thought this proved the possibility of the entrance of the micro-organism through

the conjunctival sac. The diplococcus intercellularis meningitidis of Weichselbaum was found in pure culture in this case. With regard to the sporadic cases he said the general impression seemed to be that these were in the milder cases. He distinctly remembered the first case he ever saw in 1899 in New York City in which the patient died within twenty hours; this was a sporadic case and the diplococcus intercellularis was obtained in pure culture. Therefore, one should not believe that sporadic cases were the milder ones. The meningococcus had been found in the blood in a few instances. He reported the case of a patient suffering from recurrent attacks of fever, with rashes about the joints, in whom the meningococcus was found in the blood on two occasions; after eight or ten weeks the patient developed symptoms of cerebro-spinal meningitis and then the organisms was developed in pure culture. Another case of a boy he reported; the patient was brought into the hospital after being treated for typhoid fever; he complained of pains in the back of the neck; there was the rash about the joints, the presence of Kernig's sign, and all which pointed to the possibility of cerebro-spinal meningitis developing; later the meningococcus was found in the spinal fluid. He said that meningococcus was one of the organisms which caused systemic sepsis independent of any meningeal involvement, and that this organism should be included among those causing general sepsis.

Dr. E. D. FISHER, of New York, said that in eighteen cases of cerebro-spinal meningitis seen at Bellevue Hospital the meningococcus had been found in all but two; in one case there was found the streptococcus, and in the other pneumococcus. The diagnosis was never difficult in those that he had seen and lumbar puncture was not required in order to make a diagnosis. The regular course of treatment was pursued. Lumbar puncture seemed to give some relief but the injection of lysol was not productive of any good, the results not being at all promising. The Kernig's sign was not present in such a large proportion of the cases as related by Dr. Elsner, and he did not place as much value on it as some. All he could learn with regard to the prodromal symptoms was that many suffered from general malaise, headache, suddenly became more ill and then were brought into the hospital in a comatose condition. The ordinary course of the disease was about one to five days.

Dr. E. S. THOMSON, of New York, said regarding the eyes, that cases of conjunctivitis and choroiditis might be avoided by proper care of the eyes, keeping the patient in the dark and using some simple wash. The deeper lesions, of course, were the most serious. In the great majority of cases there follows a total destruction of the eye; in some cases the trouble subsides without any trouble with the eyes. Optic nerve lesions in this disease were usually toxic in origin and have a tendency to get well. In optic neuritis of a very low grade, the inflammation frequently led to optic atrophy, and it was very important that it should be recognized early. Sometimes one had a considerable degree of optic neuritis without any reduction of vision until some time after. Optic neuritis should always be energetically treated because of the possibility of atrophy setting in during the convalescent period.

Editorial

A man cannot become a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry flounders along in an aimless fashion, never able to gain any accurate conception of disease, practising a sort of pop-gun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

WILLIAM OSLER.

Aequanimitas, with other Addresses.

The
Henry Phipps
Institute.

The First Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, recently issued, is a very striking and suggestive volume, and should be widely read. It includes an account of the work of the first year and the popular lectures delivered under the auspices of the Institute. The broad purpose of the Institute is described by Dr. Lawrence F. Flick, the Medical Director, as a "concentrated effort upon a single disease for its extermination," a hint that might well be heeded in many other branches of medical work. This "effort" is expended in two directions: First, upon the treatment, prophylactic and remedial; second, upon scientific research. It is not our purpose to recite the statistics of the Institute or the results already accomplished, as there can now be no question of the feasibility or the success of such plans, but rather to point to the scheme of organization and its extremely practical tone.

A building has been secured in a thickly settled and squalid section of the city of Philadelphia, in which tuberculosis is rife. This serves for dispensary work and a small hospital. From this food and medicines are ordered or supplied. A staff of physicians and nurses has been organized for the thorough study of every phase of tuberculosis. There are consequently an autopsy report, by Dr. Joseph Walsh; a report on laryngological work by Dr. George B. Wood, on neurological work by Dr. D. J. McCarthy, on a case of fibroid phthisis by Dr. Mazyck P. Ravel, on colored patients by Dr. H. R. M. Landis; and a statistical study of tuberculosis in Philadelphia, by Dr. J. W. Irwin.

A notable feature of the report as indicating the development of research on the numerical method, is the tabulation of the frequency of individual symptoms.

The broad purpose of the founder is further shown in the lecture course, of semi-popular character, which was conducted under the auspices of the Institute during the latter part of the first year and the beginning of the second. The lectures, which were delivered by Drs. Trudeau, Osler, Sims Woodhead, Herrmann M. Biggs and Maragliano, have already been published, but are appropriately collected in this volume. With the exception of the lecture of Dr. Maragliano, which describes the specific therapy of tuberculosis, and in less degree that of Dr. Woodhead, on its morbid anatomy and histology, these contributions are eminently utilitarian. Dr. Trudeau, in most graphic language, draws a pen picture of the beginnings and growth of the sanatorium at Saranac, from which so many lessons have been learned. Dr. Osler and Dr. Biggs carry the war into Africa; the former in a discussion of the Home in its Relation to the Tuberculosis Problem; the latter on the Administrative Control of Tuberculosis.

If we were to derive any dictum from this notable publication—notable as an exposition not only of scientific medicine, but also of the practical effect of scientific medicine in controlling disease—it would be this:

It is the duty of every community to seek and discover every case of tuberculosis in its midst, and to grapple with every problem presented by that case, social, economical and medical, until the disease is eradicated.

Finally, and of local interest, attention is directed to the resolution presented by Dr. Rooney at the January meeting of the Medical Society of the County of Albany, and unanimously adopted, calling upon the Board of Supervisors for a local institution for the treatment of tuberculosis. This matter should not be permitted to rest here, but with the experience so freely published by the Institute established through the generosity of Mr. Phipps, should be elaborated and developed upon the same comprehensive and liberal basis. The attention of our physicians having been concentrated upon this end, there need be no doubt of its accomplishment.

Scientific Review

THE ETIOLOGY OF RABIES.

In March, 1903, Dr. Negri, an assistant in Professor Golgi's laboratory at the University of Pavia, announced the discovery of small endocellular bodies in the nerve cells of animals dying of rabies and stated that he believed these bodies to be protozoa and the specific cause of the disease. Soon after this announcement in a second communication, based on extended histological studies controlled by inoculation experiments, he emphasized the importance of this discovery in the rapid diagnosis of the disease.

The great interest of these observations led within a short time to the publication of a series of papers by Daddi, Volpino, Bertarelli and Volpino, Bertarelli, Martinotti, Celli, Celli and de Blasi, de Amato, Luzanni, Pace and Bosc, all of whom were able to confirm Negri's work.

These bodies were first discovered by Negri in the nerve cells of dogs dying after experimental subdural inoculations of street virus and it is in the experimental rabies of the dog that these bodies may best be studied.

Negri states that these bodies are readily recognizable in fresh preparations which have not been subjected to technical handling as well as in sections of the nervous system preserved in the ordinary fixing fluids and stained by any one of a number of well known methods. In very thin sections one can recognize them in ordinary haematoxylin and eosin preparations, provided that the sections are not too deeply stained with the eosin. Better differential staining can be obtained by the methods of Russell, Biondi and Nissl, the iron-haematoxylin stain of Heidenhein, the haematoxylin-safranin method of Foa or with safranin alone. By far the best results are obtained by fixing the material in Zenker's fluid and staining by the eosin-methelyn blue method of Mann. By this latter method the intracellular bodies are stained a brilliant red while the cell protoplasm takes a light blue stain.

Negri finds the bodies within the nerve cells in all parts of the central nervous system, their distribution varying according to the site of inoculation and possibly according to the symptoms of the disease. Negri observes that in cases where the symptoms were those of rabies furiosa the bodies are most numerous in the

cerebrum, while in the paralytic form of the disease they are most numerous in the spinal cord and ganglia.

In most cases, and especially in cases inoculated by the subdural method, they seem to show a predilection for the cells of the Ammonshorn where the bodies are found in greater numbers in the large nerve cells, lying in the protoplasm of the cell body or its processes. In the latter they may be found at some distance from the cell body.

With regard to their distribution within the cell and the number of bodies found within a single cell there seems to be no uniformity, the bodies varying in number from one to six in an individual cell and being found irregularly distributed throughout all parts of the cell protoplasm.

The size and shape of these supposed parasites varies within wide limits, ranging from small, round or slightly oval forms one to one and a half microns in diameter through a series of forms with gradually increasing measurements until one reaches bodies ten, twelve, or fifteen microns in diameter, and frequently, even much larger elliptical or pear-shaped forms measuring 22-27 microns in length by five to six microns in breadth. These giant forms are usually found in the larger protoplasmic processes.

The most numerous forms are those of medium size which may be either round, measuring from four to ten microns in diameter, or oval forms measuring from five to ten microns in length by two, three or four microns in breadth.

The shape of the larger bodies seems to be determined by their position in the nerve cell; thick triangular forms with rounded corners being found in the pyramidal cells where the shape of the intracellular body is seen to be limited by the cell border, while the elongated forms are found in the protoplasmic processes.

No matter what their forms or distribution, these bodies always show a definite and characteristic internal structure and Negri believes that the constant presence of this finer internal structure goes far to prove that these bodies are not simple artifacts or degeneration products but that the internal structure is the essential structure of a definitely organized parasite. This structure is seen best in preparations stained according to the method of Mann which procedure, however, must be carried out with considerable care or the bodies will be stained too deeply and appear simply as homogeneous rose-red masses. In properly stained preparations, within the interior of the "parasites"

may be seen smaller secondary bodies which take the stain less intensely and have a hyaline appearance. These smaller bodies vary in distribution and number according to the size of the "parasite."

In the interior of the larger "parasites" a considerable number of these secondary bodies, twenty to thirty or more are found; while in the smaller forms the number decreases to two or three within a single "parasite;" the smallest recognized form of the "parasite" contains but one of these hyaline bodies.

That the structure of these secondary bodies is not uniform throughout is shown when they not infrequently take the blue stain. When so stained they show a distinct central body and a peripheral zone appearing as a double contoured enveloping membrane. The finer internal structure of these bodies, as well as the bodies themselves, can be seen in unstained preparations, and are brought out with especial clearness by treatment with dilute acetic acid.

Intracellular bodies similar in all respects to those found in the Ammonshorn are also to be found in the cells of the cerebral cortex, the Purkinje cells of the cerebellum, the cells of the basal ganglia, pons, medulla, spinal cord and spinal ganglia.

Following his discovery of these bodies in the nerve cells of experimentally infected dogs, Negri directed his attention to the study of the nervous tissues of other animals dying with rabies and in all of the rabid animals which he has studied he finds bodies identical in all respects to those described above. However, in most other animals, and especially in the rabbit, these bodies do not reach the large sizes found in the dog, which Negri believes to be the animal especially adapted to their study.

In Negri's second paper, dealing with the practical application of his discovery as a histological method for the rapid diagnosis of rabies, he publishes data obtained from the examination of eighty-eight animals in which, with a few exceptions, he was able to find the bodies in cases where the diagnosis by the inoculation method was positive and in no case does he find the bodies when the diagnosis was negative. In a third paper, published this year, Negri takes advantage of the discovery made by Kraus and Clairmont that rabies can be produced experimentally in birds by subdural inoculation. He is able to confirm in full the results of these investigators, and, using geese for his experiments, he finds within the nerve cells of the geese dying with rabies bodies

agreeing in all particulars with those described by him in his previous papers.

These bodies are found constantly after the development of the symptoms and then only. He is unable to find them in any case before the onset of the symptoms.

A further interesting observation made by Negri is the fact that these bodies are demonstrable not only in fresh material and material fixed soon after death, but can be demonstrated in material which has undergone considerable decomposition or which has been subjected for considerable periods of time to the action of glycerine.

The investigations of Daddi, Volpino, Bertarelli and Volpino, Martinotti, D'Amato, Luzanni, Pace and Bosc have confirmed in almost every detail the claims made by Negri, but have for the most part failed to throw additional light upon the true nature of the Negri bodies. They have, however, by reporting large series of thoroughly controlled observations practically established the fact that the finding of these bodies in the nerve cells of animals suspected of having the rabies is of great value in the rapid diagnosis of the disease.

Negri, Daddi, Bertarelli and Volpino, and Luzanni report the presence of these bodies in cases of human rabies.

D'Amato in a study of forty-eight animals in addition to confirming the work of Negri, has made an extensive study of the finer structure and staining properties of the Negri bodies. In his paper he gives a detailed account of the results obtained by the numerous staining methods employed by him, but is able to add but little to our knowledge of the minute structure of these bodies. While Negri states that he believes the variations in size of these bodies to be due to different stages of development, he and the subsequent observers have made no attempt to classify these supposedly protozoon parasites under any one subdivision of the protozoa nor have they attempted to describe a definite life cycle.

Bertarelli, taking advantage of the facts observed by Negri in regard to the resisting powers of these bodies under the influence of conditions which more or less rapidly destroy the virulence of the vaccine of rabies, undertook a series of experiments with the object of ascertaining whether or not there is a demonstrable relationship between the changes in the virulence and alterations of the microscopic appearance of the Negri bodies.

In carrying out his experiments he took small pieces from the Ammonshorn and cerebellum of dogs dying with rabies, fixed one piece immediately in Zenker's fluid as a histological control, while he subjected duplicate pieces to the action of chemical and physical agencies such as dessication, heat, putrefaction, maceration in water, glycerine, etc. After such treatment one part of the material from each experiment was fixed in Zenker's fluid for histological study while another part was injected subdurally into rabbits in order to ascertain whether or not the material was still virulent. Bertarelli was unable to demonstrate any relationship between the alterations in the virulence and the morphology or staining properties of the Negri bodies which latter were in most cases apparently unaltered even though the virulence of the material was entirely lost. This fact leads Bertarelli to suggest the hypothesis that these bodies may represent a product of the specific parasite of the disease rather than the parasite itself.

Filtration Experiments. Experiments having a bearing on the possible etiology of rabies but undertaken along lines entirely different from those of Negri have been carried out by de Vestea, Remlinger, Celli and de Blasi, Bertarelli and Volpino, and Schuder. All of these investigators have been able to show that the virus of rabies can be filtered through the coarser types of the bacterial filters including the ordinary Berkfeld, and Berkfeld's V, N, & W, while in the case of the Chamberland F. the results are conflicting.

The experiments of Remlinger are particularly convincing. In one experiment he made an emulsion in water of the brain of a rabbit dying of fixed rabies and filtered it through a series of three Berkfeld V filters, reserving enough of the filtrate after each passage to inoculate ten rabbits. Of the rabbits inoculated with the first filtrate six developed rabies while of those inoculated with the second and third filtration seven and nine respectively developed rabies.

In order to pass the virus through the less porous N. & W. Berkfeld filters Remlinger found it necessary to first filter the emulsions through a Berkfeld V in order to remove albuminous substances which are supposed to prevent the passage of the virus through the pores of the finer filters. Remlinger has made practical use of the fact that the virus of rabies is filterable in cases where the nervous tissues of suspected animals have been

contaminated by bacteria. He also reports the interesting fact that while most animals dying after the injection of filtered virus show the typical symptoms of rabies and emulsions of their nervous tissues are virulent; other animals inoculated with the filtrates die with symptoms simulating rabies, but emulsions of their nervous systems do not yield potent virus. Remlinger believes that death is caused in these latter animals by the toxin of rabies.

Celli and de Blasi and Negri have been able to demonstrate Negri bodies in animals dying of rabies following injections of filtered virus. It would be interesting to know whether the Negri bodies are present in animals dying from the effects of the toxin alone.

The results of these researches seem to demonstrate quite conclusively first, that after the onset of the symptoms there are present in the nerve cells of the rabid animals endocellular bodies which vary greatly in size and which are highly resistant to chemical and physical agencies, and second, that whatever the specific parasite of rabies may be, at some time in its life cycle it is of such size as to readily pass through filters impervious to known bacteria. The filtration experiments of McNeal with trypanosoma Lewisi have shown that this parasite has a stage in its life cycle in which it is capable of passing through a bacteria proof filter. The protozoon nature of the Negri bodies is, however, by no means proven, and the fact that these bodies remain structurally unaltered long after the disappearance of the virulence, is not in accord with the known facts concerning the changes which take place after death in other forms of cell life.

December 3, 1904.

E. MAC D. STANTON

[Attempts made by the writer during the past summer to pass the virus of rabies through ordinary Berkefeldt, Chamberlain F. & B., and Kitasato filters were uniformly negative. A histological study of the nervous systems of six experimentally infected rabbits was likewise negative.

Owing to the small amount of material studied we do not feel justified however, in drawing any conclusions from these results.

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Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, JANUARY, 1905.

Deaths

	1901	1902	1903	1904	1905
Consumption.....	17	17	30	14	22
Typhoid Fever.....	2	2	1	1	1
Scarlet Fever.....	2	0	2	0	0
Measles.....	1	0	0	0	0
Erysipelas.....	1	0	0	0	0
Whooping-cough.....	0	0	4	0	1
Diphtheria and Croup.....	8	3	0	1	0
Grippe.....	7	0	3	2	3
Pneumonia.....	19	9	10	16	21
Broncho-pneumonia.....	7	3	6	3	5
Bright's Disease.....	16	14	10	15	19
Apoplexy.....	19	12	5	9	14
Cancer.....	8	7	8	8	9
Accidents and Violence....	7	6	4	3	8
Seventy years and over....	37	31	29	32	41
One year and under.....	15	10	21	20	16
Total deaths.....	188	141	153	135	181
Death rate.....	22.13	16.59	18.01	15.89	21.30
Death rate less non-residents.....		15.18	17.18	14.83	20.01

Deaths in Institutions

	1902		1903		1904		1905	
	Total	Non-resident	Total	Non-resident	Total	Non-resident	Total	Non-resident
Albany Hospital.....	8	4	8	3	15	4	14	6
Albany Orphan Asylum....	1	0	1	0	1	1	0	0
County House.....	4	3	6	3	2	0	4	0
Home for Aged.....	0	0	0	0	0	0	1	0
Homeopathic Hospital....	5	2	0	0	0	0	1	0
Hospital for Incurables....	0	0	0	0	0	0	1	0
House of Shelter.....	0	0	0	0	0	0	0	0
Little Sisters of the Poor...	1	0	2	0	3	2	1	0
Penitentiary.....	1	1	0	0	0	0	0	0
Public Places.....	2	2	1	0	0	0	3	1
Sacred Heart Convent....	2	0	1	0	0	0	0	0
St. Francis de Sales Orphan Asylum.....	0	0	0	0	0	0	0	0
St. Margaret's House.....	0	0	2	0	1	0	1	0
St. Peter's Hospital.....	4	0	4	1	5	1	6	3
St. Vincent's Female Orphan Asylum.....	0	0	0	0	1	1	0	0
Births at term.....								94
Still births.....								3
Premature births.....								2
Total.....								99
Marriages.....								40

WORK OF HEALTH PHYSICIANS

	1902	1903	1904	1905
Assignments made.....	57	105	91	82
Calls made.....	249	314	356	398

INSPECTIONS

In the Bureau of Plumbing, Drainage and Ventilation there were 151 inspections made, of which sixty were of old buildings and ninety-one of new buildings. Twenty-seven inspections were made of iron drains laid, five of tile drains, one of urinals, seventeen of cesspools, fifty-six of wash basins, forty of sinks, thirty-nine of bath tubs, thirty-three of wash trays, ninety-one of tank closets. There were fifty-four permits issued, of which forty-one were for plumbing and thirteen for building purposes. Fifteen plans were submitted to the Department for approval, of which eight were of old buildings and seven of new buildings. Twenty-three houses were tested on complaint, and twenty-three inspections were made of houses, with thirty-five reinspections.

In the Bureau of Sanitation, there were twenty complaints made, of which two were of privies, four of closets, one of drains, five of plumbing, one of water, one of filthy yards, one of filthy premises, one of gas, one of chickens, one of dogs and one of odors. There were eighteen inspections made and twenty-seven reinspections, and two cases were referred to the Commissioner of Public Safety for disposition.

In the Bureau of Mercantile Establishments, during the month there were fifty inspections made, and fourteen mercantile certificates were issued to children, and four factory certificates.

BUREAU OF CONTAGIOUS DISEASES

Cases Reported

	1902	1903	1904	1905
Typhoid Fever.....	9	8	4	5
Scarlet Fever.....	5	9	5	4
Diphtheria and Croup.....	46	14	11	7
Chickenpox.....	5	12	5	8
Measles.....	12	10	1	10
Whooping-cough.....	1	5	2	0
Consumption.....	1	5	0	4
Total.....	79	63	28	38

CONTAGIOUS DISEASES IN RELATION TO PUBLIC SCHOOLS.

	REPORTED		DEATHS	
	Dip. S. F.		Dip. S. F.	
Public School No. 6.....	2		..	
Public School No. 9.....	1		..	
Public School No. 10.....	1		..	
Number of days quarantine for diphtheria:				
Longest..... 20	Shortest.....	5	Average.....	14
Number of days quarantine for scarlet fever:				
Longest..... 43	Shortest.....	14	Average.....	27
Fumigations:				
Houses..... 16	Rooms.....	30		

The increased death rate in Albany for the month of January is largely due to the increase in the deaths from consumption and pneumonia. There does not seem to be any marked increase in the deaths from bronchopneumonia or bronchitis. The month appears to have been disastrous to the life of aged people; forty-one persons over seventy years of age dying during the month.

Contagious disease generally has decidedly diminished; but one death from typhoid fever and five cases reported. There has been a slight increase in the number of cases of measles reported, but so far there have been no deaths. Ten cases of measles were reported during the month. Scarlet fever which showed a tendency to increase with the opening of the public schools, is now under control.

Medical News

Edited by Eugene E. Hinman, M. D.

ALBANY MEDICAL COLLEGE ALUMNI ASSOCIATION.—At a meeting of the Executive Committee, held February 18, 1905, with President Cotter in the chair, it was decided to give a dinner at the Hotel Ten Eyck on the evening of Commencement day, May second. Committees were designated.

ALBANY HOSPITAL.—The organization of the Board of Governors for the ensuing year has been effected as follows: President, J. Townsend Lansing; Vice-President, Charles R. Knowles; Secretary, Gustavus Michealis; Treasurer, Walter Launt Palmer; Special Treasurer of the Endowment Fund, Dudley Olcott; Executive Committee, J. Townsend Lansing, Charles R. Knowles, Albert Hessberg, Dudley Olcott, Albert Vander Veer; Law Committee, Albert Hessberg, General John H. Patterson and Jesse W. Potts.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—STATISTICS FOR JANUARY, 1905.—Number of new cases, 102; *Classified as follows:* dispensary patients receiving home treatment, none; district cases reported by health physicians, sixteen; charity cases reported by other physicians forty-three; patients of limited means, forty-three; old cases still under treatment, thirty-nine; total number of patients still under nursing care, 102. *Classification of diseases* (new cases): Medical, thirty-five; surgical, eleven; gynaecological, three; obstetrical, twenty-one mothers and nineteen infants under professional care; eye and ear, one; special, one. Two contagious diseases in medical list. Removed to hospitals, one; deaths, nine.

Special Obstetrical Department.—Number of Obstetricians in charge of cases, three; number of attending Obstetricians, two; students in attendance, eight; Guild nurses in attendance, seven; patients, six; visits by head Obstetrician, seven; visits by attending Obstetrician, twelve; visits by students, thirty-three; visits by Guild nurses, fifty-three. Total number of visits in this department, 105.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 865; for professional supervision of convalescents, 187; total

for the month, 1,052. Five graduate nurses and four assistant nurses on duty. Cases were reported to the Guild by four of the health physicians and by thirty-five other physicians.

CIVIL SERVICE EXAMINATION FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission announces general examinations to be held March 11, 1905, including the following positions: Assistant in Geology, State Museum; Bridge Draughtsman, State Engineer's office; Fireman; Foreman of Broom Shop, State Prisons; Junior Bridge Draughtsman, State Engineer's office; Matron, State Hospitals for the Insane; Orderly (male nurse), Erie County Hospital; Steward (woman), Institutions for Women; Supervisor of Farm Cottage, Rochester State Industrial School; Taxidermist, State Museum; Veal Inspector; Woman Physician, State Hospitals and Institutions. Applications for these examinations must be made on or before March 7th. Full particulars of the examination and blank applications may be obtained by addressing the Chief Examiner of the Commission at Albany.

NEW YORK SKIN AND CANCER HOSPITAL.—The Governors of the New York Skin and Cancer Hospital, Second Avenue corner 19th street, announce that Dr. L. Duncan Bulkley will give a special course of four lectures on the relation of diseases of the skin to internal disorders, in the Out-Patient Hall of the hospital, on Wednesday afternoons at 4:15 o'clock, commencing March 1, 1905. The course will be free to the medical profession.

ASSOCIATION OF CLINICAL ASSISTANTS OF WILLS' HOSPITAL.—Realizing the importance of a society in which clinical workers in ophthalmology may be able to report their interesting daily cases and enjoy full and free individual discussion and present theoretical and statistical papers upon ophthalmic subjects, Dr. Oliver of Philadelphia has recently organized the "Association of Clinical Assistants of Wills' Hospital." Membership by ballot, is open to all those who have been or are connected with one or more clinical services in Wills' Hospital for a period of not less than three months' time. Meetings are held at the hospital at eight-thirty, P. M., on the first and third Wednesdays of each month. All who are eligible are invited to attend and join.

THE AMERICAN ANTI-TUBERCULOSIS LEAGUE.—The next meeting of the American Anti-Tuberculosis League will be held in Atlanta, Ga., April 17 to 19, 1905. Governor J. M. Terrell has tendered the Hall of the House of Representatives in the Georgia State Capitol for the use of the League during the meeting; he will deliver an address to the League on the first morning, as will other distinguished men. The opening session is intended to be a broad one, in an educational sense, and the heads of the largest educational institutions of the United States will be invited to be present. Papers have been promised for this meeting of unusual interest by Doctors J. Riviere and Guillian Livet, of Paris, the latter giving a new treatment for consumption which has been tested in his clinic for the past two years and has never before been published. Papers by the most distinguished men in the United States have been promised. The Atlanta Chamber of Commerce will tender a reception to the visit-

ing members. A ladies' reception committee will tender a reception to visitors and see that their wives and families are cared for.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—The Sixty-first Annual Meeting of the American Medico-Psychological Association will be held in San Antonio, Texas, on Tuesday, Wednesday, Thursday and Friday, April 18 to 21 1905. The headquarters of the Association will be the Menger Hotel, where special rates have been secured for members and their friends, as at also the White Sulphur Wells, Mahncke, New Maverick and Southern Hotels—all on the American plan, with rates ranging from \$2.00 to \$5.00 per day. The Committee of Arrangements—consisting of the Chairman, Dr. M. L. Graves, of San Antonio; Dr. J. S. Turner, of Terrell; Dr. B. M. Worsham, of Austin; assisted by Dr. John Preston, of Abilene, and Dr. G. H. Moody, of San Antonio—has shown much interest in the preparation of the programme of entertainment, making it as much as possible characteristic of Texas and Mexico.

ARMY MEDICAL CORPS EXAMINATIONS.—Preliminary examinations for appointment of Assistant Surgeons in the Army will be held on May 1, and August 1, 1905, at points to be hereafter designated.

Permission to appear for examination can be obtained upon application to the Surgeon General, U. S. Army, Washington, D. C. from whom full information concerning the examination can be procured. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty-years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

In order to perfect all necessary arrangements for the examinations of May first, applications must be complete and in possession of the Surgeon General on or before April first, and for the examination of August first on or before July first. Early attention is therefore enjoined upon all intended applicants. There are at present twenty vacancies in the Medical Corps of the army.

LEWIS AND CLARK EXPOSITION.—The Lewis and Clark Exposition has issued the following announcement: The greatest gathering of medical men ever held west of the Rocky Mountains, and one of the greatest gatherings ever held anywhere, will be that during the Lewis and Clark Exposition at Portland, Oregon, next summer, when the American Medical Association will meet in convention. It is expected that at least 2,500 doctors of all cults will attend, and that these will bring with them their wives, families, and guests, to the number of 5,000 more. The sessions of the Association will be held from July 11 to July 14, inclusive.

Dr. K. A. J. Mackenzie and other local physicians associated with him have organized the work of preparing for the visitors, and the plans al-

ready formed provide for a number of most attractive features. Social entertainments will be on a large and elaborate scale. Trips up and down the Columbia river, where the scenery rivals any in the world, are among these. To enable delegates to appreciate thoroughly the river scenery, it has been arranged to hold one day's session on barges, which will be hauled by steamers down the Willamette river, a distance of eleven miles, to the Columbia, and then for a considerable distance up that world-famous stream. Facilities for such an excursion are of the best, the river steamers being powerful and safe, and the barges fitted with every arrangement for the comfort of tourists.

The general sessions of the body will be held at the Exposition grounds, in Festival Hall, a building erected especially for such purposes, and other meetings will be held at various places throughout the city. The various sections of the association—medical, gynecology, surgery and anatomy, obstetrics, ophthalmology, diseases of children, nervous and mental diseases, cutaneous medicine and surgery, laryngology and otology, materia medica, pharmacy and therapeutics, pathology and physiology—will be provided with suitable separate accommodations. A special meeting place will be furnished house delegates, consisting of 100 or more members, who will transact the business affairs of the body.

Arrangements are being made for rooms and board for the visiting medical men, and no difficulty is anticipated in securing suitable accommodations. Portland is amply provided with scores of first class hotels and hundreds of family boarding houses. Besides these the houses of Portlanders will be thrown open for the accommodation of visitors. A hotel within the grounds will accommodate 900.

The railroad companies are lending assistance to the Lewis and Clark Fair project with an enthusiasm that has not characterized their attitude toward earlier expositions, and have provided lower rates from distant points than were ever before offered for a similar event. Under the schedule already made out, a person living in the Mississippi Valley may come to Portland and return for \$45. The rate for the round trip is \$52.50 from St. Louis and \$56.50 from Chicago, and one fare from points farther east. The tickets sold will be good for ninety days, and will provide almost unlimited stopover privileges, thus making the chance to see the country as great an attraction to tourists as the Exposition itself. Yellowstone Park may be visited at small expense, and it is expected that arrangements will be perfected whereby a person may go one way by one of the northern routes and the other by way of California. Up and down the Columbia the scenery is magnificent, and there are many places of historical interest well worth visiting. A large number of handsome and comfortable river steamers will make regular trips to these points during the Exposition period, from June 1 to October 15.

HARE'S PRACTICE OF MEDICINE.—Messrs. Lea Brothers & Company announce for early publication a completely new work entitled, "Hare's Practice of Medicine," a text-book of the practice of medicine, for students and practitioners, by Hobart Armory Hare, M. D., B. Sc. In one volume of about 1,000 pages, with about 100 engravings and six full-page plates in colors and monochrome.

PERSONAL.—MARRIED.—HINMAN-TALLMADGE.—At Christ's Church, Catskill-on-the-Hudson, N. Y., on February 14, 1905. Dr. Eugene Eunson Hinman and Miss Edna Tallmadge were married.

IN MEMORIAM

JONATHAN NICHOLS, M. D.

Dr. Jonathan Nichols, an alumnus of the Albany Medical College of the Class of 1848, died at Los Angeles, California, on Tuesday January 17, 1905, of disease of the heart. He had been ill for about a year, but serious symptoms appeared a week before death.

Dr. Nichols was born on May 26, 1826, at Oxford, Mass., and moved to Cass county, Iowa, in the fall of 1869. After graduation he practiced one year in Troy, N. Y., seven years in Charlton, Mass., thirteen years in Wisconsin, and spent the remainder of his life in Atlantic, Iowa. When he went to Atlantic he engaged in the drug business and in the practice of medicine until 1874, when he discontinued his medical practice and continued the drug business. He was so engaged until recent years when he retired from active business affairs. He was at all times interested in the welfare of Atlantic and had several times been a member of the school board, city council, etc. Dr. Nichols was married in 1851 in New York City to Miss Mary Makepeace, who survives him. The ceremony was performed by the Rev. Henry Ward Beecher. Dr. Nichols was the eldest of a family of nine children, all but one of whom are living. All live in Massachusetts except one brother who is engaged as an engineer on the Panama Canal. Three children, besides the wife, survive. He was highly respected in the city of his adoption and his death is sincerely mourned. In 1898 he wrote to the Alumni Association a brief sketch of his career, stating that he "had had fair success from the beginning; had always lived well and enjoyed life;" that he had been very happy in family relations, had an abundant competence and vigorous health. He was "full of pleasant reminiscences of the old faculty," and extended a cordial invitation to other alumni to visit him.

JOSEPH ALAN O'NEILL, M. D.

Dr. Joseph Alan O'Neill was killed at San Francisco de Malabon, Cavite, P. I., January 24, 1905, during an attack by a force of ladrones on the outpost at that place. Dr. O'Neill was born in 1869 and was the son of James J. O'Neill, who resides in Schenectady. Dr. O'Neill attended Union College, where he was a leader of the musical clubs and wrote some college songs of local interest, which were regarded as of merit. He was a member of the Delta Upsilon Fraternity. He graduated from the Albany Medical College with the class of 1897, and began the practice of medicine in New York City. He entered the United States Army as a contract surgeon August 8, 1900, and all his service was in the Philippines, except during a leave of absence in the United States from December, 1902 to February, 1903. His wife, who was Miss Katherine Farrell, and a daughter, survive him.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

A Text-Book of Clinical Diagnosis, By Laboratory Methods: For the Use of Students, Practitioners, and Laboratory Workers. By L. NAPOLEON BOSTON, A. M., M. D., Associate in Medicine and Director of the Clinical Laboratories, Medico-Chirurgical College, Philadelphia; formerly Bacteriologist at the Philadelphia Hospital and at the Ayer Clinical Laboratory of the Pennsylvania Hospital. With 320 illustrations, many of them in Colors. Philadelphia—New York—London: W. B. Saunders and Company, 1904.

This handsome, well printed and well illustrated volume has been given by its author the title, "Clinical Diagnosis." The subject matter of the work is clinical laboratory methods, as indicated in the subtitle. The text books of von Jaksch and Simon having the same title, also deal with laboratory methods. It perhaps, would be desirable to choose a more distinctive title for such books, as the practitioner is often led to believe that clinical methods not requiring the use of the laboratory are discussed in them.

The author states in his preface that the book was written to satisfy the demands made by his pupils, and in many ways it appears to be a very satisfactory book for class room use.

A unique and valuable feature of the book is the unusually complete discussion of animal and vegetable parasites, illustrated by many new and original drawings. These are remarkably true to nature and it is a pleasure to find them instead of the old cuts which have done service so long. The author states that in the preparation of this portion of the book he had the advice and assistance of Dr. Charles Wardell Stiles. The demonstration of parasites causing skin diseases is discussed with unusual fulness.

The various methods of blood examination are given with satisfactory clearness and most of the later methods are described. The author, however, does not mention the modified counting chambers which are so much used to-day in the counting of leucocytes. Miescher's modification of the von Fleischl hemoglobinometer is not mentioned, although it is considered by many the most accurate instrument for hemoglobin determination. In the chapter on the urine the author gives the old Hopkins' method for the quantitative estimation of uric acid, instead of the more generally used Folin modification.

In the chapter on the sputum the author describes an ingenious apparatus worn as a mask by tuberculous patients, into which microscopic slides can be fitted to receive the fine spray emitted during talking or clearing the throat. On slides exposed to the spray the author found tubercle bacilli in many cases. The differentiation of tubercle bacilli from other acid-fast bacilli is set forth in a table giving staining reactions of the various organisms of this class.

Some minor features of the work cannot be entirely approved. The author's language is not always perfectly clear, e. g., on page 32 in the

description of Haldane and Smith's method of estimation of the total volume of the blood. "Perfection" in determining leucocytosis or degree of deficiency of hemoglobin can hardly be attained by the study of the first specimen, even with "actual experience," as suggested on page 38. It is clear enough what is meant by "any power objective" on page 35, but the expression is, perhaps, not the best.

The practice of cleaning oil-immersion lenses by moistening the handkerchief with saliva and rubbing it over the objective will probably not meet general approval. The keeping of blood in diluting pipet twenty-four hours before counting, while, perhaps, admissible under very unusual circumstances, should not be adopted as a routine measure. Quantitative estimation of urinary constituents by means of the centrifuge give only approximately accurate results, and perhaps the method is not worthy of the special mention and space given it by the author.

In many respects the volume is the most practical student's handbook of laboratory methods that has yet appeared. A. T. L.

Hand-Book of the Anatomy and Diseases of the Eye and Ear. By D. B. ST. JOHN ROOSA, M. D., L. L. D. and A. EDWARD DAVIS, A. M., M. D. Philadelphia, F. A. Davis Company, 1904.

* This is a convenient duodecimo, of 286 pages, in which its widely known authors have epitomized, succinctly, the essentials of ophthalmology and otology. The giving of derivations is a merit. The work has few other peculiarities; in view of the number of similar, praiseworthy manuals, this book's freedom from peculiarities is, perhaps, meritorious, rather than otherwise. C. M. C.

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Recent Accessions to the Library

Richards, Ellen H. First lessons in food and diet. Boston, 1904

Gt. Br.—Colonial office.—Papers relating to the investigation of malaria and other tropical diseases and the establishment of schools of tropical medicine. Presented to both houses of Parliament by command of His Majesty. June, 1903. London, Printed for H. M. Stationery off., by Darling & Son, Ltd., 1903.

Gt. Br.—Local government board.—Report on the influenza epidemic of 1889-90, by Dr. Parsons. With an introduction by the medical officer of the Local government board. Presented to both Houses of Parliament by command of Her Majesty. London. Printed for H. M. Stationery off., by Eyre and Spottiswoode, 1891.

Gr. Br.—Royal commission on arsenical poisoning.—First and final reports of the Royal commission appointed to inquire into arsenical poisoning from the consumption of beer and other articles of food or

drink. London. Printed for H. M. Stationery off., by Wyman & Sons, limited, 1901-03.

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Behring, Emil Adolph von, 1854.—The suppression of tuberculosis, together with Observations concerning phthisiogenesis in man and animals and Suggestions concerning the hygiene of cow stables and the productions of milk for infant feeding, with special reference to tuberculosis, by Professor E. von Behring. Authorized translation by Charles Bolduan, M. D. 1st ed. 1st thousand. New York, J. Wiley & Sons, London, Chapman & Hall, limited, 1904.

v. 85p. 19cm.

"The principal article is translated from a lecture delivered in Cassel, September 25, 1903. The two articles, 'Observations on phthisiogenesis' and Suggestions concerning the hygiene of cow stables' are taken from Beiträge zur experimentellen therapie, No. 8. 1904."

Bishop, Louis Faugeres, M. D., 1904.—Blood-pressure as affecting heart, brain, kidneys, and general circulation; a practical consideration of theory and treatment by Louis Faugeres Bishop. New York, E. B. Treat & Company, 1904.

Tyson, James, M. D., 1841.—A treatise on Bright's disease and diabetes, with especial reference to pathology and therapeutics, by James Tyson, second ed., including a section on the occult changes in Bright's disease and in diabetes, by George E. DeSchweinitz. Philadelphia, P. Blakiston's Son & Co., 1904.

Moynihan, Berkeley George Andrew.—Gall-stones and their surgical treatment by B. G. A. Moynihan. Philadelphia, London, W. B. Saunders & Company, 1905.

Dana, Charles Loomis, M. D., 1852.—Text book of nervous diseases and psychiatry, for the use of students and practitioners of medicine, by Charles L. Dana. 6th rev. and enl. ed. Illustrated by two hundred and forty-four engravings and three plates in black and colors. New York, W. Wood & Company, 1904.

Keen, W. W.—Surgical complications and sequels of typhoid fever based upon tables comp. by the author and by T. S. Westcott, with a chapter on the ocular complications of typhoid fever by G. E. de Schweinitz, and as an appendix ten Toner lectures, No. V. Philadelphia, 1898.

Ochsner, Albert John, M. D., 1858.—Clinical surgery for the instruction of practitioners and students of surgery, by A. J. Ochsner. 2d ed., rev. and enl. Chicago, Cleveland press, 1904.

Jackson, Victor Hugo, M. D.—Orthodontia and orthopædia of the face, by Victor Hugo Jackson, with seven hundred and sixty original illustrations. Philadelphia and London, J. B. Lippincott Company, 1904.

Roosa, Daniel Bennett St. John, M. D., 1838.—Hand-book of the anatomy and diseases of the eye and ear, for students and practitioners, by D. B. St. John Roosa and A. Edward Davis, Philadelphia, F. A. Davis Company, 1904.

MEDICINE

Edited by Samuel B. Ward, M. D., and Hermon C. Gordinier, M. D.
An Analysis of Forty-two Cases of Venous Thrombosis Occurring in the Course of Typhoid Fever.

W. S. THAYER. *Medical News*, October 1, 1904.

Out of 1,463 cases of typhoid fever observed during the past fourteen years at Johns Hopkins Hospital there have been thirty-nine instances of venous thrombosis.

Distribution of Lesions. The seat of the thrombus was in the lower extremities in thirty-eight instances and once in the upper extremities. In twenty-six cases the left side of the body was affected; both sides in nine. The femoral vein affected in twenty-one instances, the popliteal in five; iliac vein in five; internal saphenous in three, veins of calf alone in five, pulmonary artery alone in one, pulmonary artery and common iliac in one, axillary vein in one. In the majority of cases the symptoms began in the third and fourth weeks and in all but three of the cases the development of the thrombosis was associated with fever. In twenty-six cases the thrombosis came on before complete defervescence.

In eleven, or twenty-eight per cent., the complication was associated with chills which in six cases occurred during the complication, once during subsidence and in the other five cases during the height of the process, in two before recognition of the thrombosis and still in another five at the time of recognition.

Pain was the first definite symptom in every instance and varied considerably in intensity and abruptness of onset. In all but one of the cases of femoral thrombosis there was pain along the course of the femoral vein. In the five cases of popliteal thrombosis the pain was localized in the popliteal region. In the five cases of iliac thrombosis there was sudden sharp abdominal pain and in one extremely severe pain associated with leucocytosis. Perforation was suspected and a laparotomy done.

Oedema. In all of the thirty-nine cases there was swelling of the affected parts. In a little over half of the cases oedema was present, swelling alone in one-third.

Palpability. In ten out of thirty-nine cases the thrombotic mass was felt as a palpable cord.

Leucocytosis. In twenty-two cases white counts were made. In twelve, or 54.5 percent., above 10,000; from 10,000 to 15,000 in six cases fifteen, to 20,000 in three cases; in sixty-six per cent. over 9,000. The highest count was 24,864; lowest count, 2,700. In every instance but one the phlebitis came on in the third week at a period when in uncomplicated cases the leucocyte count should not be above 5,500 according to statistics.

Secondary infections. In seven instances these had preceded or co-existed with the onset of the thrombosis. These secondary processes were boils, bronchitis, gangrene of lung; fistula in ano, chronic otitis media, amebic dysentery.

Mortality. In five cases there was a fatal result. In two instances the thrombosis was the direct cause of death (resulting embolism).

Pathology. Bits of clogged vein examined histologically showed evi-

dences of well marked inflammation, changes in walls of vessel, such however as might well have arisen secondarily to the thrombosis.

Cultures. *Bacillus typhosus* in pure culture in one case. Cultures negative in one case.

After results. Sixteen patients were seen or communicated with months or years after onset of the complication.

After history of ten cases of femoral thrombosis. In all instances more or less permanent disability; in six cases oedema lasting from a few weeks to two years; in five cases cramps in legs, especially at night and after exercise. In every instance affected leg and thigh were permanently larger and there were marked varices. After history of popliteal-thrombosis. These cases were seen several years after onset of thrombosis. Leg weak and toward end of day it became oedematous.

After history of two cases of thrombosis of veins of calf. Oedema with development of ulcers; itching, varicosities.

Final. (1) The onset occurred in third week or later; (2) local pains and fever were first symptoms; (3) chills in twenty-eight per cent; (4) increase in number of leucocytes: extent of leucocytosis depends upon extent of the lesion; (5) lower extremities: left side; femoral vein very frequently involved. (6) In the event of sudden severe pain in lower abdomen coming on during latter part of typhoid fever and associated with leucocytosis, the possibility of iliac thrombosis should always be considered. (7) Venous thrombosis in lower extremities is always a serious complication especially as regards after results. The extensive varices often resulting in ulceration, the weakness of the leg, the frequent cramps in muscles, all these are source of more or less permanent disability. (8) In thrombosis of femoral veins a greater or less part of the blood from the affected extremity is often carried up by the iliac vein of opposite side, the current crossing abdomen through anastomosis in the hypogastrium resulting in characteristic triangular area of varicose veins.

E. F. S.

A Contribution to the Study of the so-called Infectious Myositis. (Beiträge zur Kenntnis der sogenannten Myositis infectiosa.)

H. MIYAKE. *Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie*, xiii Band, 2 Heft.

By infectious myositis is understood an inflammation of muscle which is localized exclusively in the striated muscle and running the usual clinical course of an infectious disease and generally associated with suppuration. The disease appears to be relatively rare in Europe and America, but of very frequent occurrence in Japan. The writer reports thirty-three cases which he observed in a period of one and one-half years in his practice in Japan. The etiology of the condition has been carefully studied from a bacteriological point of view and the infection is found in a great majority of the cases to be due to the staphylococcus aureus. In thirty-two of his thirty-three cases which were studied bacteriologically, cultures were negative in only two instances. Of the thirty positive cases, in twenty-seven there was a pure culture of the staphylococcus aureus. In two cases it was mixed with albus. In one case the culture was pure streptococcus. Animal experiments showed a high virulence

in every instance. The clinical resemblance of infectious myositis and osteomyelitis is quite as close as is the bacteriological resemblance, both diseases depending for the most part on the staphylococcus aureus infection and being only in rare instances due to the streptococcus. The mode of infection appears to be similar in the two diseases. In some instances small infected wounds, furuncles, acne pustules and eczema may be the portals of entry. In other instances apparently the infectious organisms gain access to the circulation through the mucous membranes. The writer emphasizes the fact that one cannot assume some focus of infection as a portal of entry unless the bacteria of both the focus the resulting abscess are shown to be similar. The bacteria appear to find access to the muscle through the blood current. Clinically two forms of infectious myositis may be distinguished, the solitary and the multiple. He states that infectious myositis may be considered as a septicopyæmic affection. Muscle tissue has always been regarded as especially resistant to infectious agents of all kinds. The writer believes that in instances of this disease there must be a less end resistance of the tissues as well as an increased virulence of the bacteria. The general condition of the patient appears to exercise but little influence on the development of the infection. Most of the writer's cases were in good health and the onset of the disease was sudden. He believes that over-exertion of the muscle either with or without hæmorrhage or lesion of the fibres is a very important factor in the development of the disease. Trauma is another important factor. The disease occurs especially in those muscles which are used most and it furthermore occurs particularly in individuals of the working class who use their muscles a great deal. Age and sex appear to have but little influence. He discusses the interesting question as to why the disease is so much more frequent in Japan than elsewhere and states that there are three possible factors: (1) the climate and the telluric condition; (2) the racial characteristics and (3) the nourishment. Of these he believes that the racial characteristics and the nourishment play the more important rôles. The disease begins usually with a chill and a high fever. There is marked prostration. The affected muscle at first appears painfully indurated. The muscle is contracted and functionless, the skin over it is hot but not reddened. As the disease progresses, softening occurs in the area of induration which gradually extends to its edge when fluctuation is usually detected. Sometimes the induration is confined simply to a portion of the muscle, in other instances it involves the entire muscle. There is little tendency to involvement of the neighboring tissues. Allowed to go untreated there is danger of pyæmia. Occasionally the induration disappears without the formation of pus. Fortunately the destroyed muscle regenerates very rapidly so that although the muscle may appear to be almost entirely destroyed, in a few weeks it will regain its original volume and function. Multiple myositis appears in two forms, (1) the so-called typical form which is multiple from the onset; (2) the atypical form which begins as an isolated focus and later becomes multiple.

Of the thirty-three cases reported by the writer, in eighteen, one muscle alone was infected; in twelve two muscles; in two, three muscles; and in

one, five muscles. Tomada has reported a case in which eighteen muscles were affected in fourteen of which suppuration occurred. Microscopically there is a rather marked destruction of the muscle fibres associated usually with more or less intramuscular infiltration. The diagnosis is relatively simple and is dependent (1) upon the dense infiltration and swelling of the muscle and (2) the painful function of the muscle and position of the member resulting from it. In some instances it may simulate osteomyelitis. In differential diagnosis one must think of the metastatic muscle abscesses resulting from pyæmia. The prognosis under proper kind of treatment is excellent. In the writer's thirty-three cases all recovered except one, which died of pneumonia. The prognosis as to function is also excellent. The treatment is relatively simple, consisting of the usual antiphlogistic remedies during the period of induration and free incision when there is presence of pus.

To this study of the clinical manifestations of the disease the writer has added a number of animal experiments with a view to the determination of two questions, (1) as to whether subcutaneous trauma, over-exertion and hyperæmia are pre-disposing factors in the development of myositis and (2) as to whether the staphylococcus aureus from the pus from myositis has a specific character or whether this is identical with the usual staphylococcus aureus. In one series of animal experiments he produced subcutaneous lesions of the muscles by pressure of the finger or forceps and followed this with the injection of cultures of staphylococcus aureus from pus from a case of myositis. From these experiments he concluded (1) that traumatic lesion of the muscle increases greatly the possibility of infection by the circulating bacteria, and (2) that the staphylococcus aureus from the pus of myositis is in no sense of the word specific. In another series of experiments he produced subcutaneous muscle lesions after which cultures of staphylococcus aureus from various sources were injected with the result that abscesses developed as in the preceding series. In a third series of cases he applied an elastic ligature to the extremities and after some hours injected cultures of staphylococcus aureus, and demonstrated that abscesses occurred in the uninjured muscles beyond the point of the compression. In a fourth series of cases he stimulated the muscles for some time with electricity and then injected cultures of staphylococcus aureus and demonstrated that this also will give rise to the development of muscle abscesses.

In conclusion he believes to have demonstrated that trauma, over-exertion and hyperæmia of muscles are predisposing factors in the development of primary suppurative myositis but that there is no specific micro-organism which is the cause of the disease.

The Influence of Red Light on Vaccination. (Impfreaktion unter Rothlicht.) ROESLER. *Wiener klinische Wochenschrift*, No. 47, 1904.

Goldmann recently reported his experience in vaccinating forty children in a photographic dark room and afterwards bandaging in red. In these cases he found no inflammatory action which was present in the control cases. Other investigators have obtained like results. In Goldmann's cases, those vaccinated under red light and the red bandages removed a few days later, ran the ordinary course as did those vaccinated under

the red light and not bandaged. In those cases, however, where the red bandage was retained until after the pustular stage, he found the modified course.

The author vaccinated five hundred men in the day-light and after the lymph dried applied the bandages. One-half of these men were bandaged with red gauze covered with red gelatin wrapped in red gauze. The other half were not bandaged. On the eighth and ninth day a distinct difference was noticed in the two groups. Among the red bandaged cases only six vaccinations were negative while twenty-two were negative among the others. The course of the bandaged cases was milder and shorter. The pustules dried more quickly and had only a small inflammatory area. The axillary glands were not enlarged or tender in any of these cases. The pustules did not become confluent and were much smaller and the scar was small, deep and typical. The author believes that his investigations show that the red light exerts a favorable influence over the course of vaccination and that its influence is not exerted on the lymph itself at the time of inoculation, but at the time the organism is infected.

On the principle that the red light limits suppuration, the author treated some cases of wounds from horse bites which invariably suppurated. Under the red light treatment the swelling and redness were lessened and the wounds were decidedly smaller and covered with only a slight amount of pus.

Lymphangitis Pulmonalis and its Relationship to so-called Idiopathic Empyema. (Ueber Lymphangitis pulmonalis und deren Beziehung zum sogenannten idiopathischen Empyema.)

JUREWITSCH. *Münchener medizinische Wochenschrift* No. 11, March, 1904.

It is now a well recognized fact that all cases of empyema are due to some bacterial infection. Weigert has shown fairly conclusively that serous membranes in general are infected with micro-organisms, not through the blood but by contiguity or continuity. Thus it follows that in most cases of empyema one finds some focus of infection in the vicinity of the pleura, usually an inflammatory deposit in the lung. There are, however, a certain number of cases of empyema in which at autopsy there is no definite focus of inflammation in the lung to explain the condition. These cases have hitherto been assumed to be of an idiopathic character and the bacteria were believed to have penetrated to the pleura through the blood channels, or to have found their way from the air passages to the pleura without producing any lesion in the lung. The writer has studied the question very carefully in some cases which have been at his command and has made some interesting observations. He has shown fairly conclusively that in this group of cases there is usually an inflammation of the lymphatic channels, the lymphatic vessels containing bacteria and leucocytes, and the walls of the vessels being markedly necrosed, thus allowing the penetration of the infection into the tissues or pleura. He has been able to trace these infected lymph vessels as far as the pleura and believes that through them the bacteria have gained access to the pleural cavity.

He calls attention to the more recent work which has been done in connection with the anatomy of the lymph vessels of the lung and describes the fate of elements which may be aspirated into the lung. They may pass to the lymph nodes in the wall of the bronchi, or into the bronchial lymphatic glands, or they may pass toward the pleura through the lymphatic channels and be discharged into the pleural cavity, although it is improbable that corpuscular elements can be discharged through a normal pleura.

Elements which gain access to the pleura may again be absorbed by the pleura, but only by the costal and mediastinal, for it has been conclusively shown that the pulmonary pleura does not possess the ability to absorb substances from the pleural cavity, the lymphatic vessels of this portion of the pleura being provided with valves which prevent the flow of lymph from the pleural cavity toward the lung. The micro-organisms concerned in the cases which he has studied were in every instance streptococci, which fact he believes speaks for the primary lymphangitis. He regards it as extremely improbable that an empyema may be caused by bacteria brought to the pleural cavity through the blood channels. In certain cases where it is impossible to demonstrate any lesion of the lymphatic vessels of the lung, and yet where an empyema is found to exist, he advances the theory that the lesion of the lymphatic vessels may have healed, just as in peripheral infections one may frequently find the involvement of a group of lymphatic glands after every evidence of the lymphangitis has disappeared.

Complicating the empyema of this region there may be a secondary inflammatory process in the lung. There may also be metastatic foci of suppuration in the kidneys and other organs. In two cases which he studied the peritoneum became infected by the passage of the infectious elements from the pleural cavity through the diaphragm. The posterior mediastinum may also be affected secondarily.

As the result of his observations the writer comes to the conclusion that a number of the cases of so-called idiopathic empyema are due to a primary pulmonary lymphangitis.

Remarks on the Hyperacidity of the Gastric Secretion and Its Treatment.
(*Bemerkungen über Hyperacidität des Magensaftes und ihre Behandlung.*)

VON NOORDEN. *Zeitschrift für klinische Medizin*, 1904, Band 53.

Hyperchlorhydria was at first regarded as a rare disease but now it is known to be of frequent occurrence either as an accompaniment of other morbid conditions as gastric ulcer, certain forms of gastric catarrh, chlorosis, some psychoses and organic diseases of the nervous system, or as an idiopathic disease. The writer proceeds to consider only those cases of purely functional changes designated secretory neuroses.

1. Hyperacidity without gastric distress. If the gastric secretion is examined in all digestive disorders, whether gastric distress is complained of or not, and also in many cases of neurasthenia it is striking the frequency of hyperacidity without any complaint on the part of the patient. Hyperacidity, when present, does not necessarily produce dyspepsia

gastrica. In order to cause this condition, gastric pain, pressure and heart burn, there must be an especial irritability of the gastric nervous system in addition to the secretory anomaly. In most of the cases this is usually present and the true hyperacid dyspepsia occurs.

2. Hyperacidity and constipation. Two-thirds of the author's cases of hyperacidity were constipated and often to a marked degree. It is doubtful if the constipation is to be regarded as an accompaniment or as a resultant of the hyperacidity. The treatment was in all cases purely dietetic. Coarse and abundant diet with Kissingen or Homburg waters were given. Many had for a long time been taking a diet similar to that given in the later stage of ulcer treatment. In this way the gastric hyperacidity was diminished. This same result was not obtained by medicines, enemata, massage or electricity.

3. Hyperacidity and Condition of Nutrition. Many patients with hyperacidity are in a wretched physical condition arising from the time of their gastric distress or developing later. It is doubtful if hyperacidity can be considered a result of poor nutrition although many cases seem to suggest it. On account of this experience the author has been accustomed to treat these cases with forced feeding and has rarely found a case where improvement of the general condition did not materially modify the distress of the hyperacidity. The same good results have also followed the employment of forced feeding in acid gastric catarrh and in the second week of an ulcer cure.

Concerning Primary Cancer of the Pleura. (Ueber den primären Krebs der Pleura.)

G. SCAGLIOSI. *Deutsche medicinische Wochenschrift*, November 17, 1904.

The diffuse cancer of the pleura offers a subject of great interest not only on account of the difficulty of the diagnosis, but also because of its histological findings.

The author's case is of particular interest because it differs macroscopically and microscopically from the other recorded cases.

The patient, a woman aged forty-eight years, came to the hospital for treatment, fifty-two days before her death. At the time of admission, she complained of great pain in the left half of the thorax, accompanied by dyspnoea. Before her admission to the hospital, the left pleura had been tapped five times. On examination, it was found that the left half of the thorax was very prominent, with displacement of the organs, and complete dullness on percussion. There was an absence of vesicular respiratory sounds over the area of dullness. The patient was again tapped several times while in the hospital, and in spite of the fact that 1,200 cubic centimetres of fluid were withdrawn, she was not relieved. The microscopical examination of the exudate showed the presence of many large, fatty, epithelial-like cells, which were often found in small masses. At the autopsy, all the organs, with the exception of the left pleura, were practically normal. The pleura was uniformly, and very much thickened, the surface being covered with peculiar coarse depressions and in places elevations.

These elevations were distributed fairly uniformly over the pleura

costalis and diaphragmatica. The pleura pulmonalis and lung were not involved. The left lung showed only severe compression atelectasis.

The mediastinal lymph glands were enlarged, but contained no tumor nodules. The microscopical examination of the thickened pleura gave the following findings: cavities, filled with epithelial-like, cylindrical cells, were found in the fibrous and much thickened pleura. Between these, and around them, a connective tissue stroma was distributed. This stroma was abundant in the outer portion of the pleura.

The arteries showed the following changes. The intima was much thickened and between it and the media a rather soft tissue was found. In other, and particularly larger arteries, this tissue was also found, and in it epithelial-like, small cells, which occurred in some of the arteries in the form of masses of epithelial cells.

This disease of the pleura was first described by E. Wagner under the name endothelial cancer of the pleura. Perls called it pleuritis carcinosa, Schweninger and Fraenkel, lymphangitis proliferans; and Rossier, cancer diffusus. Primary tumor formation of the pleura is usually accompanied by a general but sometimes irregular thickening of the pleura.

It is not easy to determine in every case, whether the neoplasm originated in the superficial epithelium of the pleura, which was true as to Benda's case.

Wagner's term for this condition—endothelioma—was due to his conception of the endothelium; he associated the endothelial cells of the pleura with those of the lymph vessels, and believed positively in a simultaneous development of an anomalous hyperplasia of the endothelium of the lymph vessels and pleura.

Others, who were not able to determine the origin of primary carcinoma of the pleura in the superficial epithelium, considered this condition a lymphangitis and not a tumor formation.

Cancer of the serous membranes occurs most frequently in the diffuse form, and the pleura is most frequently involved.

The author believes that in his case the disease started in the lower part of the pleura and extended very rapidly upwards.

The inflammatory process in the pleura cannot be absolutely separated from the cancerous development. It is logical to believe that the inflammatory process is the primary condition. The author has collected fourteen cases of primary cancer of the pleura from literature. It occurred eleven times in males and three times in females, the majority of the cases (ten) occurring between the fortieth and fiftieth year. The youngest patient in whom the disease was found was aged thirty-nine years, and the oldest sixty-eight years. The disease occurred eight times in the right pleura and six times in the left pleura. An exudate is always found in the pleural cavity, and has a tendency to recur soon after it is evacuated.

In conclusion, the author states that his case shows that the cancer developed in the walls of the blood vessels (arteries) and that the inflammatory process of the pleura preceded the development of the malignant condition and prepared a favorable soil for it.

PSYCHIATRY

Edited by G. Alder Blumer, M. D.

Infantilism. (Ueber von der Schilddrüse unabhängigen Infantilismus.)

LUIGI FERRANNINI. *Archiv für Psychiatrie und Nervenkrankheiten*, Band 38, Heft 1, 1904.

Andral first noticed the fact that not infrequently as a sequel of tuberculosis a certain child-like habit developed, and later Hirtz was able to prove a relation between infantilism and tuberculosis. In 1881 Lorain described the characteristics of infantilism in tuberculous persons, and pointed out the weak, slender, and small bodily frame, which characterized the entire individual rather than any organ, and persistent youthfulness, so that a man of thirty years appeared to be scarcely eighteen. The elaboration of this description has resulted in what is known as the Lorain type of infantilism, in which a man in miniature results rather than that any peculiarity of childhood remains unchanged in adult life. The different parts of the body are proportionate just as in adults. There are no thick skull, inelastic cheeks, round joints, prominent abdomen, or relatively short legs as in the child. In this type the bodily stature does not reach that of the adults. The hair of the beard, of the axilla, and of the pubes is absent. The intelligence is in both classes generally normal.

In contradistinction to the facts of the Lorain type, Brissaud has differentiated a second form: myxœdematous infantilism, or the type of Brissaud, giving the well-known characteristics of cretinism. Between these two forms, quite distinct classes of patients, there have been described a great number of transitional forms, and in either case the relations of these types, to anomalies of the lymphatics and other glands have been well-known.

Ferrannini describes cases, which he calls tuberculous infantilism, malarial infantilism, and pulmonary and mitral infantilism, in which anomalies in the lymphatic system are not found. Among the causes of the Lorain types are infections, intoxications, general disturbances of nutrition and predisposition to the disease. In the cases of two sisters there was the history of febrile attacks with erysipelas of the face, together with general disturbance of digestion and nutrition, suggestive of tuberculosis. Hereditary syphilis may also be prominent in some of these cases.

In chronic malaria the author has observed cases of infantilism showing distinctly a fawn-colored complexion, small figure, prominent abdomen and an elderly expression, so that the true age of the patient could not be judged. In malarial cases the bodily proportions are preserved, as is characteristic of the Lorain type; but the particularly notable feature is the icteric complexion and the pronounced distension of the body, due to the enlarged spleen and liver.

The infections which have been noted in this connection include leprosy, erysipelas, rheumatism, influenza, diphtheria, scarlet fever and measles. Among the intoxications alcohol assumes the first place, but lead, nicotine, morphine, mercury, and bisulphide of carbon have been noted. These causes of course must be taken in connection with other more direct causes,

as poverty, frequent child-bearing, mental indisposition, and any factor which tends to diminish the general resistance.

The author then reports a case of pulmonary or cyanotic infantilism. In cases of the pulmonary type there is some retention of the characteristics of childhood, as shown by the relation of the trunk to the lower limbs, the protruding abdomen, the small thorax, together with the blue discoloration of the skin. It is thus characteristic of the pulmonary cases that certain indications of degeneration and malformation persist. Webbed fingers have been found.

In the mitral cases the type of Lorain is intimated in the slow and universal lack of development of the entire body and of the mind without the disturbance in harmony in the former. With the diminution in stature go slender limbs and figure, absence of hair, incomplete development of the larynx, lack of sexual feeling and a mild degree of mental weakness. These patients retain the self-conceit, timidity, irritability, the habit of blushing of youth, and the tastes, inclinations and the play of features of an immature person. This form of disease is more frequent in women.

It thus appears that infantilism of the type of Lorain should not be confused with that of the type of Brissaud: in the former cases we have a man in miniature, with retarded, but almost complete development; in the latter, an individual who has never gone beyond the state of a child in his development. The type of Lorain shows several forms which have characteristics of their own, by which they may be differentiated, among them being most prominently the tuberculous, syphilitic and malarial, that is to say, those of toxic origin; and, finally, cases due to disturbances in the circulatory apparatus of which there are two prominent classes, the pulmonary and the mitral.

Twelve Cases of "Korsakow's Disease" in Women.

JOHN TURNER. *The Journal of Mental Science*, Vol. xlix, No. 207, October, 1903.

This paper is preceded by a short review of the literature showing that 192 cases have been analyzed, and from these it appears that nearly three-fourths are of alcoholic origin, other causes being neuritis following typhoid fever, childbirth, jaundice, pyæmia, arsenical and perhaps lead poisoning. Oppenheim, however, could find no cases in others than alcoholics. Some authorities do not consider that polyneuritis is a necessary accompaniment. The cases generally occur between the ages of thirty and fifty, and in all the cases in women multiple neuritis has been present. The percentage of complete recoveries is very small, being only about two. The mental symptoms are summarized by the author as amnesia, disorientation, pseudo-reminiscence and confabulation. The speech may be thick, but is often normal. The condition of the pupil is varied. Seven of the author's cases recovered sufficiently to be discharged from the hospital, but the memory remained seriously impaired in four. The peculiar mental state which is presented by these patients seems to justify its description as a separate disease. It is allied to delirium and involves an impairment of consciousness. The author attributes the disorder of consciousness to the fact that time and space perceptions depend upon the due appreciation of the sequence or simultaneity of impressions; in this disease, inasmuch as

this supply of sensations from the periphery is not properly adjusted in the central nervous system, there results a state of pseudo-reminiscence and confabulation, which is nothing more or less than the demonstration of mental perceptions previously recorded.

*Mental Disorders Due to Autointoxication. (Ueber Autointoxications-
psychosen.)*

E. MEYER. *Archiv für Psychiatrie und Nervenkrankheiten*, 39 Band, 1
Heft, 1904.

Since Senator announced, in 1884, that self-infection, as he designated it, and especially that which originated in the digestive apparatus, had a special influence upon the nervous system, it has been accepted that disturbances of the nervous system are very frequently due to autointoxications. That this may be true of mental disorders is recognized, although their etiology in consequence of extraordinarily complicated conditions is in a great number of cases very obscure. Without doubt, the mental symptoms, in connection with the bodily, are often traceable to poisoning, and particularly to some form of toxin developed in the organism itself during its own processes of metabolism.

Several authors have attempted to differentiate mental symptoms depending upon the various forms of autointoxication. Meyer believes that this is possible to a very limited extent. Acute delirium is quite characteristic of autointoxication. He describes this condition as a mental disturbance in which there is a high degree of clouding of consciousness with extreme excitability and severe general disturbance of nutrition, usually with fever. His first case showed cloudy swelling of the liver, spleen, kidneys, lymph glands and mucous membrane of the intestines, with microscopical changes only in the central nervous system. His second case was based upon extensive arterio-sclerosis with hemorrhage into the bowels. No microscopical examination was made. His third case followed influenza in a patient with chronic insanity, in whom there was reason to attribute the condition to renal autointoxication following hydro-nephrosis.

He also cites five cases in which the mental symptoms were characterized by stupor with exhaustion. In one case was combined chronic and acute catarrh of the large intestine, with dilatation, displacement and catarrh of the stomach; in another, endometritis, terminal broncho-pneumonia and an encapsulated cysticercus. No lesions were found outside of the microscopic changes in the central nervous system. In three other cases there were marked changes in the intestines. In his group of stuporous cases there were certain definite nervous symptoms, as headache, vertigo, syncope and tremors. One case was complicated by alcoholism. Mentally there were clouding of consciousness with difficulty of apprehension, and incoherence, which ranged from a dream-like confusion to delirium. Certain intermittent disabilities in the motor sphere suggested hysteria, to which was added a marked tendency to obstinacy, verbigeration and stereotypy in movements and attitudes. The microscopical examination of the central nervous system showed in the cortex, especially in the paracentral convolutions, pronounced changes in the ganglion cells; in

the central convolutions, and quite frequently in the worm, pronounced stippling, and this was also marked in the pyramidal tracts; the glia was irregularly hypertrophied. Among the clinical manifestations the author directs particular attention to the presence of indican in the urine.

Magnan's Febrile Alcoholic Delirium. (Das Delirium alcoholicum febrile Magnan's.)

ALZHEIMER. *Centralblatt für Nervenheilkunde und Psychiatrie*, No. 174, July 15, 1904.

The possibility of a febrile reaction in delirium tremens has been questioned, and a great number of writers have been arrayed on either side. Rose, for instance, insists that fever does not occur in the most severe cases, while Döllken believes that delirium tremens is to be classified with the febrile diseases, and has never seen a case without fever. The majority of writers take a middle ground, and several have associated elevation of temperature with complications. In not a small number of cases it appears certain that an axillary temperature above 37.5° is not seen. At the same time there are severe cases with pronounced elevation of temperature as described by Magnan. At the Frankfort Asylum there were three such cases in 160. These were strongly-built men, between thirty and forty years of age, who were all whiskey drinkers. The delirium was not accompanied by bodily disease. The patients were very restless and presented busy delirium, pronounced hallucinations of sight, inability of orientation, especially in relation to their surroundings, coarse tremor, profuse sweating, and, shortly after the appearance of the delirium, severe epileptiform attacks. The temperature reached, respectively, 39.4° , 39.6° and 40° , and just before death in one case 41.8° ; with deepening coma occurred ataxic movements, grinding of teeth, rhythmical movements of the jaw, distortion of the face, spasms of the arms, legs and facial muscles, and unintelligible speech. The patients continued restless to the end. There were two autopsies. Neither showed any changes to explain the fever except those in the brain, which are common to chronic alcoholism. There were destruction of the pyramidal and of Purkinje's cells, and numerous small hemorrhages in the cortex, with degeneration of the capillaries.

It seems plain that such a disease as febrile alcoholic delirium exists; that this represents a severe form of alcoholism, and is apt to terminate fatally.

LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY

Edited by Clement F. Theisen, M. D.

Relations of Laryngology, Rhinology and Otology with other Arts and Sciences.
SIR FELIX SEMON. *Laryngoscope*, October, 1904.

This is an abstract of an address read at the International Congress of Arts and Sciences, St. Louis. The immortal aphorism "Life is Short, Art is Long, Technique is Difficult," applies to-day with even greater force than when it was uttered two thousand years ago by the father of medicines. Economical considerations stand in the way of indiscrimi-

nately prolonging the time of medical study, and more and more work has to be compressed within the span of the few years which serve to prepare the future medico for his professional life. It has then become extremely difficult to equip students so thoroughly, that they can enter practical life with full knowledge of their craft in every branch of medical thought and work. Under these circumstances, division of labor has become a logical and unavoidable necessity. Gradually one recognized specialty has developed after another, partly owing to the necessities of special training in a certain technique, partly because only men trained in that technique could promote further investigations.

At the International Medical Congress of Brussels in 1875, eight Sections sufficed to carry on the work, which was truly representative of the state of scientific medicine at that time. That number had been more than doubled twenty-five years later, when no less than seventeen sections had to be formed at the International Congress of Paris of 1903.

The writer then spoke of the dangers of specialism *i.e.*, that of producing narrow mindedness. Whether by natural turn of mind or by want of steady connection with broader aspects of pathology, there is no gain-saying that the enthusiastic specialist is apt to see a local trouble everywhere, and to overlook disturbances of general health and other organs which in reality require the chief attention. He quotes Virchow's words from the address given at the public meeting of the Berlin Medical Society in 1885, "that no specialty can flourish and develop usefully and beneficially, if it does not ever and ever drink from the general fount, and if it does not remain in relationship with other specialties; that no specialty can flourish which separates itself completely from the general body of science." The author considered the intimate connection of laryngology, rhinology and otology with physics, chemistry, mathematics, philosophy, history, biology, technology and music.

The branches of medical science named, have it in common that they deal with the investigations of the physiology and pathology of deep-seated cavities. Hence the question of their illumination for purposes of examination is of the greatest importance. This applies with particular force to laryngology. Although through the work of Kirstein, direct inspection of the larynx by means of depressing the tongue with suitable spatulas has been rendered feasible in certain cases, examination of the larynx is still universally carried out by means of reflecting mirrors. The very foundation of laryngoscopy depends upon the principle of physiological optics; that when the rays of light fall upon a reflecting surface placed in a certain inclination towards the source of light, the angle of reflection is equal to the angle of incidence.

It sounds almost like a myth that the progress of laryngology in its infancy should have been retarded for almost half a year, and that Türck of Vienna should have given up his studies for a time because the winter of 1857 in Vienna was a very dark one, and because sufficient light for illumination of the larynx could not be obtained from the direct rays of the sun. The initial difficulties were overcome only through Prof. Czernaks substituting artificial light for the uncertain rays of the sun, and using the large ophthalmoscopic mirror of Rente for concentrating the rays.

The author then considers the use of the X-rays in rhinology, and laryngology, and mentions their application by Dr. Spiess of Frankfort, who has suggested that the delicate and by no means dangerless probing of the frontal sinus, may be controlled and thereby rendered safe, if during the act of introducing the probe, the picture of the patient's head be thrown on the screen, the operator being thus enabled to see whether the instrument is really on the right way into the frontal sinus.

The author then considers stroboscopy a more restricted application of light for the use of laryngology. By an ingenious modification of the stroboscope the late Prof. Oertel had succeeded in constructing an appliance by means of which the oscillation of the vocal cords could be accurately observed. With the aid of this apparatus interesting observations on the action of the vocal cords during singing have been made. Among others that the sounds of the chest register are produced by oscillation of the vocal cords in their entire length and breadth, whilst the sounds of the falsetto register, are caused by the longitudinal division of the surface of the vocal cords into parts, noduls being at the same time formed on them.

Semon then considers the relation of photography, stereoscopy, sound, under which is concluded the use of the photograph. König's sensitive flame which has been utilized for the registration of sounds waves produced by the human voice, and electricity, to laryngology, rhinology and otology.

The relation of chemistry, mathematics, climatology, philosophy, logic, history and literature, technology, music and biology, to these specialties, is also considered. In considering the relation of general medicine to the specialties, he states, that while these are a number of local diseases of these organs, strictly limited to them, in another large and important number, the affection for which the aid of the specialist is sought, is only part and parcel of a systemic disease, and it is time that some enthusiastic specialists should come to understand that in such cases, not so much local as constitutional treatment, is indicated. There are numbers of cases of general anaemia, of periodical disturbance of circulation, of general plethora, of nervous irritability, of gout, in which unpleasant sensations are experienced in the throat, nose or ear, which can only be effectually treated by attending to the systemic conditions which underlie these conditions. On the other hand, actual organic lesions occurring in these parts, often enough are of the greatest importance for the diagnosis and proper treatment of grave general diseases. As examples: paralysis of one vocal cord may for a long time be the only actual sign discoverable of aneurysm of the aorta, or of other mediastinal tumors, or affections in the posterior cavity of the skull, of pleuritic thickening of the apex of the right lung, of cancer of the gullet, and a host of other grave organic affections; certain laryngoscopic appearances may enable us to diagnose the existence of pulmonary tuberculosis at a time when all other signs fail; a cerebral abscess is now known to be much more frequently due than was suspected only a few years ago, to disease of the middle ear and mastoid process, and has become infinitely more accessible to treatment; the surprising improvement which follows removal of adenoids

in much-developed cases, is also mentioned. In conclusion, under the head of medicine, the author considers the relation of surgery, children's diseases, ophthalmology, dermatology and syphilitic diseases, neurology and mental diseases, to these specialties.

Cancer of the Larynx.

SIR FELIX SEMON. *Medical Record*, November 5, 1904.

It is a matter of history that the case of the late German Emperor represents the turning point of modern knowledge of cancer of the larynx. Until then, that knowledge had been sadly incomplete and unsatisfactory. Very little was known about the early symptoms and early laryngoscopic appearance of the disease, and as a rule its existence was only recognized when it was in an advanced stage. Up to 1878 many cases were in such circumstances treated by thyrotomy, an operation which, though positively ideal in early stages, is quite insufficient, as we now know, when the disease is more advanced. The results were naturally disastrous, and led, after Paul Bruns' sweeping condemnation in 1878, to almost complete abandonment for a time of thyrotomy in malignant disease of the larynx. The more severe forms of radical operation, total laryngectomy and hemilaryngectomy, enthusiastically welcomed when first introduced, did not at once justify the hopes which had been raised, and in the early eighties, the outlook for the patient afflicted with laryngeal cancer was grave in the extreme. The author in 1886 drew attention to several so far unknown or at any rate undescribed laryngoscopic signs, which had enabled him in various cases to diagnose laryngeal cancer at an earlier period than was at that time usual.

The deplorable doctrine of the late Lennox Browne, that benign laryngeal growths were specially liable to undergo malignant degeneration after intralaryngeal operations, was followed by the publication of the author's "Collective Investigation," undertaken with the help of most of the prominent laryngologists of the world, to test the truth of Browne's assertion. The material thus collected, enabled the author not only to show the complete want of foundation of Browne's contention, but also to establish more definitely than had hitherto been done, the differential diagnosis between benign and malignant neoplasms of the larynx, and to discuss fully the position and relative importance of the microscopic examination of the intra-laryngeally removed fragments of new growths, for the differential diagnosis between the benign and malignant forms.

The author opposes most strenuously J. N. Mackenzie's views, published in 1900, in which he demands the naked-eye diagnosis of laryngeal cancer in its early stages to the complete exclusion of intralaryngeal removal of a fragment for the purpose of microscopic examination. He also opposes Mackenzie's teaching, that early total extirpation of the entire organ, with its tributary lymphatics and glands, whether the latter be apparently diseased or not, is the only possible safeguard against local recurrence or metastasis. An important point against this teaching, to perform the radical operation on the strength of the naked-eye diagnosis alone, is the fact, that when an error in diagnosis is made, it is more commonly on the side of regarding an innocent growth as a malignant one, than a malignant growth as an innocent one.

While no sane person has ever asserted that cancer is one thing in one part of the body and another thing in another, both careful clinical observation and the result of surgical interference have shown that both the severity of the required interference and recurrence after operation, depend, to a degree, upon the question of the primary localization of the malignant new growth. The larynx with regard to this question occupies a very peculiar position indeed. Exactly twenty-five years ago, Krishaber of Paris, proposed to divide malignant growths of the larynx in two categories, intrinsic and extrinsic forms. In the former are included tumors originating from the vocal cords, the ventricles of Morgagni, the ventricular bands, and the subglottic cavity within the larynx proper. The term extrinsic is applied to tumors originating from the epiglottis, the posterior surface of the cricoid plate, the aryteno-epiglottic folds and the intra-arytenoid fold.

This classification is much more than one of convenience. It signalizes a fact of the greatest possible clinical importance, *i. e.*, that in the *intrinsic* variety the disease remains for a long time a purely *local* affection, and shows only at a comparatively late period a tendency to metastasis, while in the *extrinsic* variety, owing to different conditions of lymphatic anastomosis, the neighboring glands are already affected at a very early period. Cancer occurring in the intrinsic region is therefore amenable to less radical treatment than the same form of malignant disease when originating in the extrinsic region.

The author then considers the total removal of the larynx, particularly Glucks' brilliant work in this line, but states that he cannot entirely agree with Gluck's statement that "restoration of function is a secondary consideration; first of all we must seek to prolong the life of our patient." The author believes that when the question of operation arises, the further question ought to be most seriously considered whether the life thus prolonged is worth living. There are certain operations which mutilate not merely the body but take away a part of human existence. There is none coming more under that head than total extirpation of the larynx. The author believes that such grave operations ought only to be undertaken under two conditions, (1) that the diagnosis was absolutely certain, and (2) in the event of there being no possibility of saving the patient by a less mutilating operation.

Four methods for the relief of laryngeal cancer are considered: *i. e.*, intra-laryngeal removal, subhyoid pharyngotomy, thyrotomy and hemilaryngectomy. Intra-laryngeal operations are condemned because this method while adapted to the removal of growths from the surface, gives no guarantee whatever for the complete eradication of a sufficient area of healthy tissue all around the new growth.

Subhyoid pharyngotomy is only applicable to cases in which the disease is confined to the epiglottis and in which the neighboring lymphatics have not yet been infected. In considering thyrotomy, Semon refers to his report published a year ago, of twenty thyrotomies with or without removal of small fragments of cartilage in cases of undoubtedly malignant disease of the larynx, with nineteen recoveries, two quite doubtful recurrences, and one death.

These operations were performed between 1891 and 1904. The great

majority of cases have regained surprisingly good, although more or less husky voices. Of the seventeen patients who permanently recovered from the operation, three died several years afterwards from affections altogether unconnected with the original disease; one, six years after operation, from an acute abdominal affection; the second, three and a quarter years afterwards from embolism of the heart or lungs; and the third four years afterwards from pneumonia. The remaining fourteen patients are all alive and well, as the author has recently ascertained. His oldest successful thyrotomy dates back to June 2, 1891, more than thirteen years ago, and he has other patients living and in good health, in whom the operation was performed twelve, ten and nine years ago.

In addition to the twenty cases reported, the author has performed three further thyrotomies during the present year, all the patients making excellent recoveries.

The following conclusions are reached:

Thyrotomy, if undertaken in suitable cases and sufficiently early, and if performed on the modern lines which experience has shown to be successful, is a perfectly ideal operation in intrinsic cancer of the larynx.

Hemi-laryngectomy comes into question only when it is found after opening the larynx, that mere thyrotomy will not suffice. When performed it may be accompanied by removal of the tributary lymphatics, even if apparently not diseased.

Total laryngectomy should be exclusively reserved for extrinsic, and for those cases of intrinsic cancer, in which both sides of the organ are affected, and in which the disease has proceeded too far to be eradicated by milder measures. When performed it should be accompanied by the removal of the laryngeal lymphatics on both sides of the neck.

Esophagoscopy and Bronchoscopy.

E. F. INGALS. *Journal of the American Medical Association*, November 19, 1905.

Bronchoscopy must become of great interest to laryngologists, because of the aid that it affords in removing foreign bodies from the air passages, especially in cases that can not be relieved by tracheotomy alone, and also in many other cases, where the resulting scar, and the dangers of pneumonia, render the latter operation objectionable. The ease with which foreign bodies can usually be removed from the trachea, and often from a main bronchus after tracheotomy, makes the latter operation preferable in most cases, but when the diagnosis is in doubt, or when the foreign body has passed into one of the divisions of a bronchus, bronchoscopy affords a means not only of diagnosis, but of successful operation, infinitely superior to transthoracic bronchotomy.

Prof. Gustav Killian, of Freiburg, first demonstrated the practicability of bronchoscopy, and his paper read to the British Medical Association, in August, 1902, first called attention to the capabilities of esophagoscopy and bronchoscopy. Bougies may pass foreign bodies in the esophagus without touching them, and sometimes the radiograph will not show objects because of their character, or because they are hidden by the shadow of the vertebrae.

Killian also specially recommends direct laryngoscopy, through a straight tube, for detecting and removing foreign bodies from the larynx in children. He says, "In children, often insurmountable obstacles arise (to ordinary laryngoscopy). In these cases, direct laryngoscopy (Kirstein's autoscopia), can be successfully employed, especially after the administration of an anesthetic the patient's head being in a dependent position. If there is much dyspnea, a preliminary tracheotomy must be performed."

He states that a similar procedure is even more valuable for foreign bodies in the trachea.

When foreign bodies have passed deeply beyond the main bronchus, bronchoscopy renders the greatest possible service, for the reason that we may locate and accurately grasp substances heretofore beyond our reach.

Killian states, "we may without fear press the bronchi, which are highly elastic tubes embedded in soft tissue, into the median line, and bring trachea, larger bronchus, and branch into one straight line."

The author has attempted the use of Killian's instruments for diagnosis, in two esophageal cases for the removal of foreign bodies in the esophagus, and for the removal of foreign bodies from the air passages in two cases. In the most difficult cases, one of esophagoscopy and one of bronchoscopy, the operation proved entirely successful where the ordinary surgical procedures entirely failed. In the esophagoscopy the author used Kirstein's lamp as a means of illumination, but in the bronchoscopy he obtained much more satisfactory illumination with a lamp placed on a longer carrier which had been specially made for the purpose.

There are now on record up to May of this year, 14 successful cases of the removal of foreign bodies by lower bronchoscopy, and 11 cases by upper bronchoscopy. Of the lower bronchoscopy cases Killian has done three, Coolidge, of Boston, two, and Eicken, Neumeyer, Hayek, Spiess, Harrington, Wild and Lemoyez, Bodner and Schwyzer each one. Of the upper bronchoscopy, Killian has done five, Schrottes two, J. A. Killian two, and Eiken and the author one.

Killian and most of the other operators, use the Kirstein lamp as the source of illumination. The author has obtained better results with a Duall lamp introduced to near the distal end of the bronchoscope. One great advantage of this source of illumination is that the operation can be done in a light room, whereas with the Kirstein lamp, it must be performed in a darkened room. In examining branches of the bronchi too small for the passage of the bronchoscope, one of these tiny lamps on a longer carrier could be passed directly into the bronchus.

In the author's case of bronchoscopy for the removal of a pin from the lung, the patient after being brought under chloroform, was drawn up so that the head hung over the end of the table, where it was held by an assistant. With a modified Kirstein spatula the tongue was pressed forward and the bronchoscope introduced. Although all the main bronchus and its bronchus could be seen the pin could at first not be found. Finally with the aid of a blunt hooklet, with which the bronchi were examined for several minutes, part of the pin was brought across the end of the

instrument, and could be seized with forceps and withdrawn. The patient could be discharged four days after the operation, and made a good recovery.

Direct Bronchoscopy for the Extraction of Compressible Foreign Bodies.

NEHRKORN. *Deutsche medicinsche Wochenschrift*, No. 40, 1904.

According to the cases collected by Eickens up to the end of 1903, direct bronchoscopy was used for the extraction of aspirated foreign bodies, in thirty-four cases. The results on the whole were so good, that bronchoscopy, particularly as it has been practiced by Killian, must be considered a diagnostic and therapeutic measure of great value.

Pieces of bone and beans were the foreign bodies most frequently removed by means of the bronchoscope. It has been found that beans particularly are aspirated by young children, and the fact that they have a tendency to swell while in the respiratory passages, brings such case into a special category. The writer's experience with the aspiration of beans is based on the cases observed in Prof. Czerny's clinic in Heildeberg. In the first case, that of a boy aged three and a half years, the bean was extracted from the left main bronchus about twenty hours after it was aspirated. In order to employ low bronchoscopy a tracheotomy was performed. In the second case, which was observed several weeks after the first, a boy, three years old, had aspirated a bean while playing. This occurred in the morning, and was followed by very severe paroxysms of coughing and great difficulty in breathing, and the child was brought to the clinic in an almost asphyxiated condition. After an immediate tracheotomy a bean was removed from the bifurcation. The child developed a severe bronchitis, but later made an uninterrupted recovery.

The third child, a girl, four years old, was brought to the hospital with a history of having swallowed a bean the day before; this had been at once followed by a severe paroxysm of coughing and difficulty in breathing. On examination, when the child entered the hospital, coarse rales were heard over the left upper lobe, and a diagnosis of the presence of a swollen bean either in the trachea or the left main bronchus was made. Under chloroform narcosis, the bronchoscope was passed into the trachea, and the bean could be seen in the bronchus a few centimeters from the bifurcation. The bean was grasped with a long thin forceps, and about two-thirds of it extracted. After repeated trials, only small particles of the bean, which had probably been crushed by the forceps, could be removed. The same evening the child's breathing was free, and the general condition good, but on the following day, severe attacks of dyspnoea occurred, which necessitated a tracheotomy thirty hours after the bronchoscopy. For two weeks a severe bronchitis with high fever was present, but after this the patient made an uninterrupted recovery, and could be discharged from the hospital six weeks after admission.

In the six well-known cases of this kind, primary high bronchoscopy was employed in three, and primary low bronchoscopy in three, but, except in one case, a secondary tracheotomy had to be performed in all. In Eicken's cases, tracheotomy was performed in order to reach by low bronchoscopy pieces of the bean that were still in the bronchus. These

tracheotomies had really been performed for this purpose, before severe difficulty in breathing developed. In the author's third case, the great difficulty in breathing following bronchoscopy, was undoubtedly due to an inflammatory swelling of the glottis, resulting from the passage of the bronchoscope.

The difficulty of passing bronchoscopes into the trachea and bronchi of young children, and working in such long thin tubes with instruments in attempting to extract foreign bodies, renders these operations very long. Then the pressure of the tubes against the vocal cords, must cause a rather severe secondary inflammatory process, particularly when the operation is prolonged. In conclusion, the writer states that a primary tracheotomy is to be performed in young children, when foreign bodies that have a tendency to swell and soften in the bronchi, (like beans), in particular, are aspirated.

The Diagnosis and Treatment of Empyema of the Maxillary Antrum.

E. P. FRIEDRICH. *Deutsche medicinische Wochenschrift*, December 8, 1904

In order to understand the origin of diseases of the accessory cavities, the fact that these cavities are lined with a mucous membrane continuous with that of the nose, must be constantly thought of, so that tumors or other specific conditions are not important factors in producing diseased conditions of the accessory sinuses. They originate in the nasal mucous membrane itself. As all the sinuses have outlets into the nasal cavities, an inflammatory process involving the nasal mucosa easily extends to them. When an acute inflammation of the nasal mucous membrane has produced a secondary inflammation of the mucous membrane of the accessory sinuses, the conditions favoring a cure are much more favorable in the nose than in the pneumatic cavities. The reason for this is, that the nasal cavities can be treated locally with comparative ease, while the sinuses, having only narrow outlets into the nostrils, are not so accessible. The ethmoid cells and sphenoid sinus, on account of their relatively small size, and the fact that their nasal outlets are low down, offer in some respects the most favorable conditions for treatment. The position of the frontal sinuses is also favorable, but in these sinuses, the large mucous surface, favoring excessive secretion and the fact that their outlets run into the narrow infundibulum of the hiatus semilunaris, render them less favorable for treatment. The anatomical conditions of the maxillary antra, on the other hand, are unfavorable, as their outlets into the nasal cavities are situated on the roof of the sinuses, so that free drainage of pus into the nostrils — when they are diseased — only follows when they are completely filled. For this reason the antrum of Highmore is more frequently subject to chronic inflammatory processes than the other sinuses. In considering the diagnosis of sinusitis, the author calls attention to the necessity of detecting *all* the diseased sinuses, because very frequently when the maxillary antrum is diseased, other sinuses are involved at the same time, and treatment directed to the one most easily recognized — which as a rule is the antrum — is not sufficient.

A positive diagnosis of empyema of the maxillary antrum cannot be made by the subjective symptoms the patient complains of, because they

might be produced as well by involvement of any of the other accessory sinuses. The most prominent symptom is a purulent discharge from the nose, with headache, and swelling of the nasal mucosa. Patients believe they are suffering from a chronic "cold in the head." Their attention is particularly called to the discharge when it comes from one nostril only. This discharge sometimes comes on periodically, particularly in the early morning hours. The purulent discharge may be odorless or it may have a bad odor. This is more apparent to the patient than to those about him, and is not as offensive as the odor of an atrophic rhinitis. Headache, in the acute inflammatory processes involving the sinuses, usually takes the form of severe neuralgic pains in the region of the infraorbital foramen. In the chronic empyemas of the sinuses, it is often entirely absent. The clinical diagnosis of an empyema of the antrum is made by the presence of pus in the nose. As the hiatus maxillaris leads into the middle meatus, opening under the middle turbinate between the bulla ethmoidalis and uncinat process, the pus will be found here. The pus in cases of frontal and anterior ethmoidal sinusitis, is also seen in this region.

Transillumination in a unilateral antral empyema is a valuable aid in making the diagnosis, but it is sometimes deceptive when both antra are dark. In such cases, the diagnostic puncture through the lateral nasal wall with a good sized trochar, followed by washing out the antrum with a mild antiseptic solution will clear up the diagnosis.

In considering the treatment of empyema of the maxillary antrum, the author states that in the chronic cases where granulations have formed, the only effective method is the operative one, which consists in making a free opening through the canine fossa. This should be large enough so that the subsequent treatment can be easily carried out.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Strychnia as an Evacuant.

GEO. E. PETTEY, *Therapeutic Gazette*, July, 1904.

In the normal evacuation of the intestinal canal two principal forces are concerned, two things are essential, namely, secretion, or a moist condition of the intestinal contents, and a peristalsis; and one of these is as necessary as the other. Either being absent, evacuation does not occur; either being deficient, evacuation is correspondingly incomplete. Constipation is almost always attributed to deficient secretion, and following out that idea the remedies employed to overcome it are such as stimulate secretion of the glands which empty their products into the intestinal canal or which bring fluids into the canal by osmosis.

Constipation is much more frequently due to failure of peristalsis than to deficient secretion. This is borne out by the fact that a large accumulation of fecal matter is found in the colon in such cases. Much of this was secreted or excreted, and had there been sufficient peristalsis, it would have been evacuated. While it is found in the colon in hard, dry masses, it was not in that state when freshly formed, but only became so after

being imprisoned in a torpid colon sufficiently long for the fluids to be absorbed from it. The sympathetic motor centers are affected by the same influences that cause disease, a sedative influence being frequently observed on the sympathetic system. This blunting impression falls with especial weight on the intestinal canal, since motor impressions transmitted to it originate almost entirely from the motor centers of the sympathetic system. As a consequence, deficient peristalsis, manifesting itself by incomplete alvine dejections is an early symptom in almost all diseases. This of course may or may not be accompanied by deficient secretions. If there be such deficiency the constipation is more marked, but no matter how abundant the secretion may be, if the sympathetic motor centers are so benumbed as to be insensible to impressions carried to them, the intestinal tube becomes an inactive motionless mass and effectively imprisons its contents. The number of agents used in the treatment of disease for the purpose of promoting secretion is very great, and as a rule these are depended upon to excite peristalsis as well. The mercurial and vegetable cathartics excite peristalsis as well as promote secretion, but in what way is the former accomplished? Not by direct influence on the muscular coats of the intestines nor by directly stimulating the motor centers, but by reflex action. These substances act probably in a manner similar to the bile, the normal stimulant of the intestinal tract, *i. e.*, by stimulating through irritation the terminal filaments of the sympathetic motor nerves distributed in the intestinal mucosa. The amount of stimulation transmitted to the motor centers varies in a direct ratio with the area of irritation. The peristalsis is excited either by the chemical action of the agent employed, by the irritating qualities of the secretion it induces, or by mechanical distention of the intestines by hypersecretion. In either case there is irritation of the motor nerves supplying the intestinal mucosa; this impression is transmitted to the spinal centers, a motor impulse is generated and transmitted to the site of the irritation. In order that the whole intestinal canal be affected and general peristalsis excited, it is necessary that the irritation be continued longer, made more intense, or extended to more surface, thus involving a greater number of nerves. The readiness with which general peristalsis can be excited depends upon the conditions of the nerve centers, upon the extent of surface and conditions of the part to which the irritant is applied and upon the degree or intensity of the irritation. In most diseased conditions peristalsis is very deficient, and in some it is entirely suspended for a long period. In such conditions if a remedy of the class that greatly increase secretion into the upper part of the intestinal canal be given, this portion of the tube is overdistended before the irritant is distributed over sufficient surface, and consequent motor impulse generated, to excite peristalsis throughout the entire canal. This irritation and distension causes violent contractions of the part of the canal involved, but as the intestine below is so entirely motionless a fold or sharp bend obliterates its lumen and completely blocks the downward passage of its contents. Continued peristalsis forces the contents of the intestine back into the stomach; this is the condition frequently occurring after ether anaesthesia. Many surgeons give a saline at repeated intervals after an operation filling the stomach and first feet few of the intestine

below with a fluid brought there by osmosis; violent contractions are caused in the part distended but not below, and the result is frequently the vomiting of bile and mucus which has been forced back into the stomach, this continuing until enough of the fluid has traveled on down the intestine to excite peristaltic action all along the line.

Strychnia is an excito-motor stimulant and exerts its principal effects upon the sympathetic motor centers. Muscular structure dependent on these centers for motor impulse may be thrown into active motion without affecting the system to such a degree as to bring on contraction of the voluntary muscles. Strychnia has an elective action for the involuntary muscular fiber, thus the entire length of the intestinal tube may be simultaneously thrown into action by direct stimulation of the sympathetic centers by this drug. Peristalsis induced in this way corresponds exactly to that of health, the motor impulses being generated in the centers and this stimulus is transmitted in a uniform degree to all the structures that would receive them if the centers were acting normally. This is the most important point in the argument for the use of strychnia as an evacuant. The dose and frequency depend upon the patient and the degree of intestinal torpor. If strychnia be administered with a mercurial or other secretion producing drug, each does its work and plays its part in bringing about the desired result. The intestinal canal is excited to contraction throughout its entire length while the secretion producing agent begins to pour out the product of its work into the canal. There is no overdistension of the bowel at any point, consequently no violent contractions, no retrostalsis, vomiting, colic or other distress. The dose of strychnia for this purpose varies from one-eighth to one-thirtieth of a grain, given at intervals of two to three hours until four to six such doses are given. The dose of course depends upon susceptibility, body, weight, height, tonicity of tissues and degree of intestinal torpor. Pettay finds one-twentieth of a grain to be an average dose for a person of one hundred and thirty pounds weight. Young persons he finds to be more susceptible to its action than old ones; and short, compactly built persons more so than tall, loosely built individuals. Those individuals with flabby relaxed tissues require a much larger dose than do those whose tissues are in a fair state of tone. Persons whose nervous systems are profoundly impressed with any depressomotor toxic substance require larger doses than those not thus impressed. Much larger doses can be given to those using opiates and as the chief reason for constipation in the use of opium is lack of peristalsis, strychnia furnishes the key to success in such cases. After anaesthesia if a full dose of strychnia is given one hour before the saline, peristalsis is excited and the saline acts much more promptly and with much greater success, it being very rare that either of them are obliged to be repeated.

In giving a mercurial in divided doses if one-twentieth of a grain of strychnia is added to each dose no saline will be needed, and the promptness of the evacuant will be surprising to the uninitiated.

ALBANY MEDICAL ANNALS

Original Communications

THE NEW REVISION OF THE UNITED STATES PHARMACOPŒIA.

Read at the Ninety-ninth Annual Meeting of the Medical Society of the State of New York, at Albany, January 31st, 1905.

By REYNOLD WEBB WILCOX, M.D., LL.D.,

Professor of Medicine at the New York Post-Graduate Medical School and Hospital;
Physician to St. Mark's Hospital.

In 1897, this society appointed a committee on the United States Pharmacopœia, consisting of Drs. Eli H. Long, of Buffalo, R. W. Wilcox, of New York and Howard Van Rensselaer, of Albany. This committee directed its questions to teachers of Materia Medica and Therapeutics especially, and it was intended to ascertain the thought of the profession in regard to a work which furnishes the basis and standard for all text-books in Materia Medica and Pharmacy and even in Medicine. The answers developed the fact that there is a deplorable lack of familiarity with it; even a few teachers of Materia Medica apparently confounding the Pharmacopœia with the Dispensatories. It was recommended that discussion should be invited upon (1) the dropping of drugs and preparations rarely employed, (2) the insertion of doses, and (3), as to the advisability of adding a section devoted to giving reliable information concerning new remedies, without making them official. This Committee, being continued, reported an increased interest in the subject, as shown by the larger number of replies to their questions and, what was more important, a decided sentiment in favor of making the next issue of the Pharmacopœia a book of greater practical value to the physician. In the following year (1900), the Committee prepared a summary of the reports which they had received during the three years of their service, and forwarded

it to the Pharmacopœial Convention, which met at Washington in May, of that year. The Committee was for the fourth time continued in office, and its members constituted the delegates from this Society to the Decennial Convention for the revision for the United States Pharmacopœia. In 1901 the Committee reported that the delegates had attended the Convention and their work, which had extended over three years, had been presented to the Convention and had received careful consideration from the Committee of Revision of the Pharmacopœia. This Society having taken so much interest in a work which is so fundamental to all divisions and subdivisions of the healing art, its seems proper that its members should know what has been accomplished and what may be expected in what has been termed, the "law-book of medicine," of which the new revision is shortly to appear.

The Committee of Revision is at present constituted as follows:

Joseph P. Remington, Ph. M., Philadelphia, Pa., Chairman.
 C. Lewis Diehl, Ph. M., Louisville, Ky., 1st Vice-Chairman.
 Reynold Webb Wilcox, M. D., New York City, 2d Vice-Chairman. Alfred R. L. Dohme, Ph. D., Baltimore, Md., Secretary. John J. Abel, M. D., Baltimore, Md., Charles Caspari, Jr., Ph. G., Baltimore, Md., Virgil Coblenz, Ph. D., New York City; N. S. Davis, Jr., M. D., Chicago, Ill.; James M. Good, Ph. G., St. Louis, Mo.; Willis G. Gregory, M. D., Buffalo, N. Y.; Walter S. Haines, M. D., Chicago, Ill.; Carl S. N. Hallberg, Ph. G., Chicago, Ill.; H. A. Hare, M. D., Philadelphia, Pa.; Henry Kraemer, Ph. D., Philadelphia, Pa.; Edward Kremers, Ph. D., Madison, Wis.; A. B. Lyons, M. D., Detroit, Mich.; John Marshall, M. D., Philadelphia, Pa.; Oscar Oldberg, Phar. D., Chicago, Ill.; George F. Payne, M. D., Atlanta, Ga.; Henry H. Rusby, M. D., New York City; Samuel P. Sadtler, Ph. D., Philadelphia, Pa.; Lucius E. Sayre, Ph. M., Lawrence, Kan.; Wilbur L. Scoville, Ph. G., Boston, Mass.; Edward H. Squibb, M. D., Brooklyn, N. Y.; Alviso B. Stevens, Ph. C., Ann Arbor, Mich.; H. C. Wood, M. D., Philadelphia, Pa.

The only changes which have taken place have been those consequent upon the lamented death of Charles Rice, Ph. D., Chairman of this, as well as of the Committee of the previous Decennial Revision. These are, the promotion of Professor Remington from 1st Vice- to Chairman, the election of Professor

Diehl to be 1st Vice-Chairman and the choice of Dr. Rusby to fill the vacancy on the Committee.

Shortly after the Convention a Sub-Committee in Scope and Statistics, was appointed, consisting of two sections; one, medical, in charge of the author, and the other, pharmaceutical, in charge of Professor Good. I, at once, sent letters to all the State, National and Special Societies, requesting information as to what remedies and substances should be added to the Pharmacopœia, and what should be dropped. Here again, this Society, through its Committee, presented valuable information. A similar effort by my colleague, gave additional data. It is evident, then, that every effort has been made to add to the Pharmacopœia all that is prescribed by physicians or required by the pharmacist, so far as the instructions of the Convention permit. It is needless to say that these instructions are based upon high scientific standard, and in line with strict professional right-dealing. The Committee have worked diligently and harmoniously for nearly five years, and the result may now be briefly stated.

1. *Scope.* The obsolete and unnecessary has been thoroughly eliminated. Numerous and valuable additions to our therapeutic resources have been made, and the physician who is bewildered by the avalanche of inspired literature, may turn to the pages of the Pharmacopœia in security, for there he will find only that which has a scientific basis, a well-recognized demand, and a name indicative of its reality. If, by chance, some remedy may be encountered which is not in use in a particular locality it should be remembered that the Pharmacopœia is for the whole country, and not for any single section.

2. *Doses.* The introduction of doses is an innovation, although in foreign pharmacopœias they are found. They are given as "the average approximate dose for adults," in the metric system, and the approximate equivalent ordinary weights or measures inserted in parenthesis. To protect the physician, the Committee will make a distinct declaration, in some prominent place in the book, that "neither the Convention nor the Committee of Revision intends to have these doses regarded as obligatory on the physician or forbidding him to exceed them whenever, in his judgment, this seems advisable." The Sub-Committee on Posology studied the subject very thoroughly, and presented a report which will doubtless be accepted by both physicians and pharmacists, as judicious and comprehensive.

3. *Nomenclature.* The changes are mostly those demanded by present chemical and botanical knowledge. The newly-admitted articles have titles and harmony with general usage and convenience for prescribing; in chemicals a scientific name has been adopted.

4. *Assay Processes.* An enormous amount of work has been done in this direction, and practically all the potent drugs and preparations have now definite standards fixed for them to which they must conform.

5. *Purity and Strength.* These have been most thoroughly revised, in a thoroughly common-sense manner. No captious standards have been adopted, nor, on the other hand, have concessions toward a diminution of medicinal value, been made. In order to keep the same standard of preparations, which are often met in pharmacies, under names synonymous with those of the Pharmacopœia, a Sub-Committee on Synonyms, has traversed the subject most thoroughly, and their report is not only an official list of synonyms, but will do much toward maintaining harmony in prescribing and dispensing.

6. *Supplement.* The Committee on Revision have authority to prepare a Supplement to the Pharmacopœia, at any time they may deem such action desirable. Since many changes are likely in the decade which intervenes between the successive revisions, this provision seems a wise one.

I have briefly outlined what has been before the Committee, and what they have labored long and earnestly to accomplish. The volume represents the best thought and work of an unselfish body of scientists, skilled in various departments of research and practice. I ask of the physicians the same study which the pharmacist gives to it. If this be granted, scientific therapeutics will be greatly aided, and the practice of the physician will become far more intelligent and successful. The therapeutic awakening, so gratifying to those who believe that the function of the physician does not end with the making of the diagnosis, can not have a better result than that physicians shall learn what are their proper agents for the relief of suffering, and the cure of disease.

SURGERY OF TWENTY-FIVE YEARS AGO.

Read before the Medical Society of the County of Albany, March 8, 1905.

By SAMUEL B. WARD, M. D.,

Dean of the Faculty and Professor of the Theory and Practice of Medicine and of Hygiene,
Albany Medical College.

Mr. President and Gentlemen:

In view of the number and importance of the papers which are to follow, I must necessarily be brief in my remarks. The subject assigned me is "The Surgery of Twenty-five Years Ago." I am not, however, expected to give the history of the advance which surgery had made from the days of the "barber-surgeon" up to 1880. Perhaps the object which I am expected to accomplish will be best fulfilled if I say something of the advance made between 1862, when I first began to have some knowledge of surgery, and 1880.

Of course, in 1862 we had the ligature and anæsthetics. The ligature was always of silk; was long enough to permit the free end to hang outside of the wound; it had to be pulled out at the end of eight, ten, or fourteen days—whenever it had ulcerated through the tissues which it happened to include—and entire healing of the wound could never be accomplished until it was removed. The rule laid down for tying arteries was, first to draw the vessel out of its sheath so as to include in the ligature only the artery with its three coats and then the ligature was to be drawn tight enough to cut through the middle and internal coats, the external fibrous coat being tough enough to resist any ordinary pressure. The middle and internal coats when cut through curled up internally on themselves and served to reduce the caliber of the vessel and diminish the chance of secondary hemorrhage. The pressure of the ligature on the outer coat prevented the circulation at the point where it was applied and it finally cut through the outer coat by the process of ulceration. It was at the time of the completion of this ulcerative process that secondary hemorrhage was so common. In actual operation it was not always easy or even possible to seize the end of the artery to draw it out of its sheath for the purpose of ligation. It was often necessary to include in the ligature the fibrous sheath of the vessel and often quite a quantity of the surrounding tissues. For this reason it often hap-

pened that the ligature did not come out at the end of ten, or fourteen, or twenty days, but remained there for weeks. After a suitable length of time had passed, depending on the size of the vessel, it was customary for the surgeon or his assistant to make daily traction on the ligature for the purpose of hastening the process and permitting the final and complete closure of the wound. In order to effect this release, it was sometimes necessary to make continuous traction and in isolated cases this was done by attaching to the end of the ligature a long cord with a weight attached to it and passing it over a pulley. At other times the end of the ligature was fastened into an ordinary elastic rubber band which was then put on the stretch and fastened to a convenient portion of the patient's skin by means of adhesive plaster. It is unnecessary to add that all these processes were the source of untold suffering to the patient; yet the wound could never heal entirely until the ligature was released.

As wounds of any considerable importance or depth could not be expected to heal by first intention, and it had been observed that the fluid secretions, when imprisoned, were the cause of high fever and other serious troubles, the use of the perforated rubber drainage-tube hanging out of the wound along with the ligatures was almost universal.

Anæsthetics, as you all know, were introduced in 1846, and sixteen years later they had come into very general use; but when I was a student there were still many operating surgeons who had won their spurs before ether was discovered, and with them, of course, dexterity and rapidity in operation had an importance that it very soon ceased to have. I well recollect to have seen one of these men amputate a thigh at Bellevue Hospital, including everything but tying the arteries and sewing up the flaps, in a period of eight seconds by the watch.

Even in my early days I do not think that anæsthetics could have been in as general use in some parts of Europe as they were in this country, for I well recollect one operation at which three surgeons in the navy of a foreign power were present, and they all watched with the greatest interest and manifest surprise the process of giving ether to full anæsthesia. Precisely what they said to each other we never knew, but the meaning of their actions was unmistakable.

During the War of the Rebellion both ether and chloroform

were used, and chloroform to a larger extent than in civil practice, on account of the smaller bulk and weight necessary to produce the desired effect.

During the war many of us recognized the desirability of saving every possible ounce of blood for patients who had lost a great deal on the battle-field and in the process of being brought to the hospitals. I well recollect the late Dr. Frank Hamilton, when visiting the hospital in which I was then serving, in Alexander, Va., accomplish this, in part, by raising the affected limb in the air, stroking it firmly toward the trunk, and then applying the tourniquet as speedily as possible. Before 1880, Esmarch's elastic bandage and tourniquet had been introduced.

The first time that I ever saw a patient's temperature taken was about 1868. The first thermometers for this purpose came in pairs; one instrument was straight, for use under the tongue and in the rectum; the other was bent at an angle so that when the bulb went under the arm, the stem would lie across the chest. They were eight or ten inches long and graduated as they are at present; but they were not self-registering; were not so constructed that the front of the tube would magnify the width of the column of mercury and had to be read, of course, while still in place. The first pair that I had cost between fifteen and twenty dollars.

In the early seventies the attention of the profession was called to the process of antiseptis, principally by the publications of Professor Lister. The first of these antiseptic applications consisted of carbolic acid worked up into ordinary glazier's putty, spread on tin foil and applied over the wound. Prior to 1880 the method was in vogue of saturating the atmosphere of a room with the vapor of water containing carbolic acid, and spraying this mixture even into the peritoneal cavity in such strength that the surgeon's hands would tingle for hours after the operation was completed. After a few months this became an almost universal practice, but was put to a stop entirely by the vigorous opposition of Lawson Tait, who showed that while cleanliness and asepsis were most beneficial, the use of such a method as this was positively harmful.

It occurs to me that two operations which were very common twenty-five years ago are now comparatively rare. One of these was the ligature of arteries in continuity for the cure of aneurism. When I was a student, and for years afterwards,

at almost every clinic one would see the ligation of a femoral, or a carotid, and occasionally of the innominate. Why aneurisms are so much more rare now-a-days I do not know, unless it be that syphilis is much better under control now, and that treatment is instituted at an earlier day and more effectually carried out.

The other operation was for stone in the bladder. In my student days extraction of the stone by the operation of either median or lateral lithotomy, each in suitable cases, was the only known remedy. More than twenty-five years ago the operation of crushing the stone in the bladder and washing out the fragments had been introduced. I am told by operators of to-day that vesical calculus has become, in this part of the country, a comparatively rare operation, probably because hard waters are now rarely used for domestic purposes.

In 1880 abscess in the right iliac fossa had been recognized as a not uncommon affection and Willard Parker, of New York, in the early sixties had introduced an operation, which bore his name, for reaching it by an incision just inside the crest of the ilium and stripping up the peritoneum so as to avoid wounding that membrane. Up to that time, before the days of asepsis, all surgeons had a wholesome dread of opening the peritoneal cavity. There can be no doubt now that most of these cases and many of those diagnosed as "peritonitis," or inflammation of the bowels, began as inflammation of the appendix vermiformis. I am told that now-a-days, from a surgical point of view, an occasional individual may have a spleen or a liver, but most men have nothing of any importance inside of them except an appendix and a gall-bladder. In 1880 the early operation for appendicitis was practically unknown and the treatment of gall-stones fell entirely to the lot of the medical man.

Without going too much into detail this was about the status of surgery twenty-five years ago.

THE DIAGNOSIS OF ACUTE INTESTINAL OBSTRUCTION.

Read before the Medical Society of the County of Albany, March 8, 1905.

By ALVAH H. TRAVER, M. D.,

Instructor in Surgery and Assistant Demonstrator of Anatomy,
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The purpose of this paper is not to describe some new disease, as intestinal obstruction has been described by both Hippocrates and Galen, but rather to endeavor to show that in some cases, at least, it is with the greatest difficulty that we are able to make a diagnosis, and that it is still more difficult, or absolutely impossible, to determine the exact cause and location of the obstruction.

SYMPTOMS: Of the symptoms on which a diagnosis is based, pain and vomiting are the earliest and most important. The *pain* often radiates from the seat of obstruction, and in most cases is very severe. At first it may be intermittent, following movements of the body; but if the obstruction be complete, it becomes continuous.

Vomiting at first consists of stomach contents, but as the obstruction persists, it becomes more frequent and consists of a dark fluid with fæcal odor. The amount of the vomitus naturally depends on the location of the obstruction. The higher up the intestinal canal the obstruction is located, the less is the quantity of the fæcal vomiting.

General abdominal tenderness is nearly always present, but may be most marked over the site of the lesion.

Tympanites generally appears at the end of twenty-four hours and is marked if the obstruction be located in the large intestine, but if the obstruction be in the upper part of the small intestine, tympanites is slight or may not be present at all.

From the onset of the attack the patient may be *constipated*, but more often the lower bowel becomes evacuated and there are no more fæcal movements.

The patient's *appearance* is bad from the onset of the disease, and prostration is very marked. He soon becomes covered with cold sweat accompanied with normal or sub-normal temperature. The respiration is labored and the pulse becomes rapid and weak.

The symptoms above mentioned apply to intestinal obstruction from any cause, but when we try to determine the exact

cause of the obstruction, we meet with the greatest difficulty in some cases.

Volvulus is the cause in about fifteen per cent. of the cases, and the large intestine is most frequently involved. The patient is generally past middle age and gives history of constipation. The onset is acute. The pain is apt to be paroxysmal, due to peristalsis. The abdomen rapidly distends and becomes very sensitive to palpation.

Strangulation is the cause in thirty-five per cent. of the cases. It most frequently affects males under thirty years of age. The onset is sudden and is early accompanied by fæcal vomiting. In some cases, the history of a previous abdominal operation will aid us to arrive at a diagnosis, as the strangulation may be caused by adhesions following laparotomy, by an adherent Meckel's diverticulum, by an adherent appendix or a Fallopian tube. The bowel may also become strangulated through the various hernial openings, through an opening in the mesentery or omentum or through the foramen of Winslow.

Intussusception is the cause in thirty-five per cent. of the cases. It occurs nearly always in children with no previous history of intestinal trouble. The onset is rapid and the pain paroxysmal, accompanied by tenesmus and bloody and mucous stools. A tumor may be felt, most often in the right iliac region, as in seventy-five per cent. of the cases of intussusception, the ilium enters the large intestine.

Gall stones are the cause in about eight per cent. of the cases. The patient is apt to be past middle age and a previous history of gall-stone colic may be obtained. Intense pain and fæcal vomiting are early symptoms. Palpation may reveal a hard movable mass, which may be lodged from time to time giving rise to intermittent obstruction.

The location of the obstruction may also be very difficult to determine. If the obstruction be in the upper part of the small intestine, the vomiting appears very early but is not fæcal. The distension is slight and the pain is referred to the upper part of the abdomen. Prostration comes on early and is very marked.

If the lower part of the small intestine be the seat of obstruction, the vomiting is more profuse and distension is marked, the abdomen having a uniformly rounded appearance.

In obstruction of the large intestine the vomiting does not

occur so early and is not usually so excessive. Distension is most marked in the region of the colon.

When the obstruction is in the lower part of the large intestine, tenesmus is intense and bloody and mucous stools are passed. By injecting water into the rectum, we may in a general way locate the obstruction, as only a small amount can be injected if the obstruction be low.

A tumor may be felt in some cases of obstruction from intussusception, gall stones, or foreign bodies. The tumor is sausage-shaped in intussusception, but in gall stones it may be moved along in the intestinal canal. Distension may cause the tumor to disappear. Location of the obstruction may be determined by noting the cessation of the peristalsis at a certain point.

I would like to report the following cases:

Case I. Mr. A. C. age eighteen. Laborer. *Family history*—The mother is insane and the intelligence of the entire family is below the average, otherwise the family history is unimportant.

Patient's Previous History—His general health was fairly good until three years ago. At that time, he was troubled for several days with intense abdominal pain and nearly incessant vomiting. He was unable to get a movement of the bowels for four days. A diagnosis was made of acute intestinal obstruction, but owing to the patient's very weak condition it was thought best not to operate. To the surprise of the physicians in charge of the case, the vomiting gradually grew less troublesome, the bowels moved and after a long convalescence, the patient recovered.

On August 8, 1904, after eating very freely of oysters, salads, etc., he was again taken with severe abdominal pain accompanied by vomiting. In forty-eight hours, the vomiting became a very profuse dark fluid with fecal odor. August 11, I saw the case in consultation. The patient's general appearance was bad, temperature ninety-nine, pulse one hundred and of fair quality. The abdomen was not distended and examination revealed nothing except a sensitive area with no definite outlines to the left of the umbilicus. The patient was brought to the hospital and a high glycerine and salts enema was given with good results. Epsom salts was given by mouth and was retained and all vomiting stopped for twelve hours. Six hours after entering the hospital, his bowels moved quite freely. As vomiting had ceased and bowels had moved freely, I believed the obstruction had been relieved and did not consider an operation indicated.

August 12, the vomiting of dark fluid with fecal odor began again and the general appearance of the patient became very bad. The pulse was one hundred and thirty and of very poor quality. Temperature, ninety-eight. The abdomen was not distended, but there was an area about three inches in diameter to the left of the umbilicus that remained very sensitive.

As it was evident the obstruction was still present, an operation was performed. The small intestine was slightly distended. A firm fibrous band was formed extending from the anterior abdominal wall about five centimetres below the umbilicus to the lower part of the small intestine (probably Mickel's diverticulum). Twisted about this band was about two feet of jejunum. The coils of intestine involved were very adherent and the intestinal wall was so soft that it was with the greatest difficulty that adhesions were loosened without opening the intestine. The intestine was brought into the wound and a large glass drainage tube introduced to allow free drainage.

Although but little ether was given and the operation lasted but twenty minutes, yet the patient stood the operation very badly and died a few hours after the operation.

Case 2. Mr. A. L., age twenty-one, printer. September 12, 1902, I operated on this patient for acute gangrenous appendicitis. There was general septic peritonitis present and the intestines were adherent in many places. The condition of the patient would allow no lengthy operation, and the septic condition present would not, in my opinion, allow breaking up the many adhesions, and thus opening up new channels for the absorption of the septic material. Consequently the peritoneal cavity was irrigated with salt solution and free drainage introduced. Although the patient was very weak at the time of operation, yet he rallied nicely from the shock and gradually improved till the seventh day.

He then complained of severe abdominal pain. The abdomen rapidly distended and was sensitive to pressure. He was troubled with frequent attacks of faecal vomiting. Temperature, ninety-eight; pulse, one hundred and twenty, and of poor quality. Various cathartics and enemas were given with no results. The case presented typical symptoms of acute intestinal obstruction, and at the time of operation for appendicitis the numerous adhesions were observed, so there was a clear cause for strangulation.

We watched the case for ten hours and as the patient's strength was rapidly failing it was decided that an operation was imperative. But while preparations were being made for the operation, the patient's bowels moved, so the operation was delayed. The vomiting grew less troublesome and bowels moved several times. The patient made a good recovery and has had no intestinal trouble since.

Case 3. Mr. C. S., age 22; pattern-maker. *Family history*—Mother died of tuberculosis. Father is alive and well. No other children in the family.

Patient's history—Has never been very strong. For past six months has been troubled with a cough. August 20, 1903, was taken to the Albany Hospital. Examination showed typhoid fever, with positive Widal, and also beginning tuberculosis in the apex of right lung. He had a fairly typical run of fever and it reached normal on September 16. For six days the fever remained normal and the patient seemed to be gaining strength. But, September 22, he began to vomit. The vomitus soon became faecal, the bowels became distended, and after one small movement, no more faeces were passed, although various enemas were

given. The temperature remained normal, but the pulse was one hundred and thirty and very weak. The patient lost strength rapidly. Examination revealed asensitive area, apparently tumor formations, two centimetres to the right of the umbilicus. The case seemed to be one of acute intestinal obstruction.

Owing to the patient's weak condition, the operation was performed under local anæsthesia. Between adherent coils of intestine was found a cavity containing eight ounces of faecal material, opening into which was a perforation of the intestine. It was evident that a typhoid ulcer had caused perforation of the bowel through a part that was adherent, so that the intestinal contents were retained in this cavity and by pressure gave rise to the symptoms simulating intestinal obstruction.

The histories of these cases show that we may have all the typical symptoms of obstruction, as in cases two and three, yet have other conditions to deal with, while in other cases, as in case one, there may be present no symptom of obstruction, temporarily at least, yet at operation a very marked intestinal obstruction may be revealed.

THE EVOLUTION OF SURGERY DURING THE PAST TWENTY-FIVE YEARS.

Read before the Medical Society of the County of Albany, March 8, 1905.

By ALBERT VANDER VEER, M. D.,
Professor of Surgery, Albany Medical College.

Mr. President and Gentlemen:

Dr. Ward has given us a brief, but concise and most impressive reference to the surgery of twenty-five years ago.

There are not many of the present members of the Medical Society of the County of Albany who retain a knowledge of the work then done in general and special surgery, and the keen anxieties and embarrassments that attended the practice of this branch of our profession. I know of nothing in my professional career which induces me more to express my feelings of gratitude than in the consideration of surgery—from the time to which Dr. Ward refers, up to, and including, the work of to-day. Theories in the study and practice of surgery are no longer possible or tolerated. The labored effort twenty-five years ago of the theoretical explanation of inflammation is not to be compared with the demonstration of actual facts to-day, and with the knowledge of bacteriology the latter brings us down

to such a solid basis that it is delightful to know we need no longer theorize, but simply inform ourselves and become intelligent possessors of all that pertains to the surgical pathology of the present time, in order to realize the enormous change from uncertainty to truth.

How delightful the paper presented by Dr. Traver! How earnestly does it portray the advance in surgical diagnosis, and the demonstration now so effective in considering the conditions that, under all circumstances, must be respected, *i. e.*, surgical technique!

In this connection I am impressed with an operation that I witnessed in the old hospital, done by Dr. Alden March, assisted by Dr. Armsby, about six months previous to the former's death. It was the case of a merchant from Amsterdam, N. Y., who had a growth situated just within the crest of the ileum, on the right side, which Dr. March thought he could remove without getting into the peritoneal cavity. He had referred the case to Dr. Willard Parker, of New York, who wrote a very interesting letter, in which he agreed with Dr. March as to the possibility of the operation being a success, and recommended making an incision close to the ileum, very much as he was doing in his operations for opening abscesses in connection with perityphlitis, or, as we would now term it, appendicitis. Dr. March began his operation, made his incision, and while he was making an effort to lift the tumor from its bed Dr. Armsby discovered a coil of small intestines rolling out from underneath the lower end of the incision, and said to Dr. March "You had better stop and close your incision, as it will be impossible for you to remove the growth without getting more seriously into the peritoneal cavity." This advice was followed and the operation was not completed. The patient died of septic peritonitis in a little over forty-eight hours.

That patient had no preparation regarding cleansing of the surface of the body, had not even been shaved, no particular effort had been made in washing the hands of the operator and assistants, and when the first coil of intestine presented Dr. Armsby grasped a soiled towel and placed it over the coils as they rolled out, endeavoring to replace them in this manner. Dr. March wore his old alpaca coat, the sleeves and front of which were stiffened with a deposit of pus and blood from other operations.

With our present knowledge of bacteriology and asepsis, and freedom from fear regarding entering the peritoneal cavity, it is not to be wondered at that this operation was not more successful.

Some ten years ago the writer did a precisely similar operation, in the same amphitheatre. Every effort was made in carrying out thorough asepsis in the preparation of the operator, assistants and nurses, and the patient made a most pleasing recovery.

Now to what are we to attribute the success of one operation and not the other? Surely not in the skill of the operator, but to the better knowledge of the technique, preparation and execution of the operation.

Dr. Ward just touches upon a subject the study of which, in itself, might well fill an entire evening. Our time could well have been spent in the careful discussion of the evolution of the drainage tube.

First, as a certain help in the union of wounds; in the prevention of blood poisoning, and at all times as an aid in the care of our patients. Then as to the variety of material; next as to the necessity of its use, bringing out suggestions for careful discussion regarding when to drain, when not to drain, how to drain, etc. While the drainage tube has been the means of saving many lives, yet, in some respects, it has brought us great embarrassment and disappointment. It has saved lives by letting us know of local hemorrhage, but its use has been lessened as we have become more careful, and more thorough in the control of bleeding vessels, and in having a dry, clean wound to close. Beyond a doubt the drainage tube has lengthened the years of our patients in arresting sepsis. Again, on the other hand, when not properly handled, it has brought us embarrassment in the formation of sinuses, and in abdominal surgery, while of absolute necessity, yet at times its use has resulted in hernias which might have been avoided could the wound have been completely closed. To-day it presents as our best friend, in many serious surgical lesions, yet along with it, must it be remembered that the technique of that particular case can often be made so perfect as to exclude its use entirely.

One cannot dwell without admiration upon the wonderful advances that have been made in brain surgery, in the surgery of the chest, and eminently so in regard to surgery of the abdomen.

In brain localization great credit is due our medical associates for the work they have done in that direction, enabling the surgeon to proceed in an intelligent manner, when operating for removal of tumors, relief of epilepsy and like conditions.

In the period referred to by Dr. Ward surgery of the liver and of the gall-bladder was almost entirely unknown, and much less was known of surgery of the stomach.

Intestinal anastomosis was one of the rarest of all operations.

Gangrenous hernias were discussed, and the final consensus of opinion at one of the meetings of the American Surgical Association, not many years ago, was that it was better to bring up the loop into the open incision, and see if Nature would form adhesions, and hence an artificial anus result. That was just before the days of the development of Senn's decalcified bone plates, the decalcified bobbin of Robson, the turnip, the wax, the rubber ring, the Murphy button and many other forms of mechanical contrivances for intestinal anastomosis, which have been employed so fortunately in saving the lives of many patients.

Abdominal surgery has progressed most marvelously during the evolution of a quarter of a century. Most remarkable work has been accomplished in the saving of life in the mechanical branch of simple amputations. The technique of to-day gives rapid recovery, seldom any great temperature, the study of the latter a subject that Dr. Ward referred to as being in its infancy when he was an observer and practitioner of surgery.

It may not be known to many of us present that Dr. March was ambidextrous, and that he could operate equally as well with his left as his right hand. I remember, when a boy, having heard my father speak of Dr. March's being summoned to amputate a crushed limb, the result of a railway accident, when the leg was removed and the large vessels tied in twenty-three seconds! How well do I remember associating this case with the first time I ever saw Dr. March.

Dr. Ward refers to the elevation of the limb as practiced in the Civil War, and the effort made to return to the heart and large vessels all blood held in the vessels of the extremity to be amputated. This was of great help to the patient, but what a contrast between that and our present method of infusion of normal salt solution, when we have a patient suffering from loss of blood, or one who has undergone a long, serious opera-

tion, or in cases of septicæmia, uræmia, etc. What a change from the effort at direct and indirect transfusion of blood, and also the use of transfusions of milk, compared with the present use of normal salt solution.

Now to what is all this improvement to be attributed? As previously stated, certainly not to the skill of the operator. I believe we have few surgeons of to-day who handle the knife with any greater skill than did Alden March, Willard Parker, James R. Wood, Henry B. Sands, and others to whom I might refer. Nor is it to be attributed to the more perfect knowledge of anæsthetics, but to that one great element which has been of so much value to us can most of the credit be given, *i.e.*, the establishment of laboratories for the study and classification of the life, habits, etc., of micro-organisms; the knowledge given us that the area or zone of operation must be properly prepared; that our patient's general condition must be examined, especially regarding the intestinal and urinary tracts; the knowledge of auto-infection, brought to us by keen, careful laboratory investigations; the knowledge that the surgeon himself is often the source of infection in the clean wound; that he must accept the responsibility of proper preparation of himself, in the care of his body, in the use of sterilized garments; that in the make of his instruments he must select the kind that will bear thorough cleansing; that it is not the antiseptics of Listerism, but the cleanliness of Tait, that has been brought out so forcibly by American surgeons and German pathologists; that in the doing of operations these precautions must be exercised, and all possible doubt of infection excluded.

Dr. Ward refers to the use of the silk ligature and how vividly does it call to my mind patients long-suffering from continuous discharging of pus, from multiple abscesses, sometimes from systemic infection, sapræmia and death.

Laboratory work demonstrated that there could be used a form of absorbable ligature, a ligature for which Lister strove in vain for years and years to find, yet not until laboratory investigations showed us that these ligatures could be made aseptic did we have a clean wound, and the rapid recoveries, now so impressive, and almost marvelous to the intelligent observer of to-day. No grander work has been done than by the noble and generous-minded people who have established laboratories in connection with medical colleges and hospitals.

If you were to ask me, as I look over the field of surgery, which I have known more or less familiarly in the city of Albany since 1862, I would say that no one element has entered more into our work that has brought us a greater degree of success, and has helped to maintain the reputation of the Albany Medical College, and established Albany as a medical and surgical centre, than the institution known as the Bender Hygienic Laboratory. It has been well administered. Its directors have been conscientious men in their work and men of high ideals.

These, then, gentlemen, are a few of the thoughts that come to me as I think over the subject of this paper. It touches upon only a few of the important points. It could be elaborated into a paper much longer, much more interesting, yet time enough would not be afforded me to express all the comfort I feel in belonging to a profession that has made such advances as our own, in saving and lengthening the lives of many, and in aiding in the arrest of human suffering.

ALBANY HOSPITAL.

THIRD ANNUAL REPORT OF PAVILION F, DEPARTMENT FOR MENTAL DISEASES, FOR THE YEAR ENDING

FEBRUARY 28, 1905.

By J. MONTGOMERY MOSHER, M. D.,

Attending Specialist in Mental Diseases.

To the Board of Governors:

I have the honor to present the third annual report of the operations of Pavilion F, for the year ending February 28, 1905.

There remained in the Pavilion on March 1, 1904, fourteen patients, seven men and seven women. There have been admitted during the year one hundred and fifty men and eighty-seven women. The whole number of patients under treatment during the year was, therefore, two hundred and fifty-one.

There have been discharged two hundred and twenty-eight patients, one hundred and forty-six men and eighty-two women;

and there remained in the Pavilion at the end of the year eleven men and twelve women.

The following tables show the forms of disease and the results of treatment for the year, and since the opening of the Pavilion.

TABLE I.—SHOWING THE FORMS OF DISEASE, AND THE RESULTS OF TREATMENT FOR THE YEAR.

FORM OF DISEASE	Recov- ered		Im- pro'ed		Un- im- pro'ed		Died		Re- main- ing		Total		TOTAL
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium	5	6	1	2	1	..	4	1	1	..	12	9	21
Confusional insanity	1	..	2	2	..	..	1	1	..	..	4	3	7
Melancholia.	5	1	3	4	7	11	..	..	2	5	17	21	38
Mania.	1	1	1	4	1	4	1	..	..	2	4	11	15
Primary dementia	1	..	..	..	4	2	..	..	2	1	7	3	10
Recurrent insanity	..	..	..	..	..	1	..	..	1	..	2	..	2
Chronic delusional insanity	..	..	1	1	3	6	..	..	..	..	4	7	11
General paralysis	..	..	..	..	4	..	..	..	2	..	6	..	6
Terminal dementia	..	..	2	2	10	12	3	1	1	2	16	17	33
Imbecility and idiocy	..	..	2	1	1	2	..	..	..	..	3	3	6
Acute alcoholic delirium.....	27	3	3	..	..	..	5	..	..	..	35	3	38
Alcoholism.....	9	1	6	..	..	1	..	..	1	..	16	2	18
Drug addiction.....	1	..	..	1	..	..	..	..	..	..	1	1	2
Eclampsia	..	..	1	..	..	..	..	..	..	..	1	..	1
Epilepsy.....	..	..	3	..	2	..	..	..	..	..	5	..	5
Neurasthenia.....	1	..	13	2	..	2	..	..	..	..	14	4	18
Hysteria.....	..	..	..	2	..	..	..	..	..	..	2	..	2
Chorea gravidarum.....	..	..	..	..	..	1	..	..	..	..	1	..	1
Hypochondriasis.....	..	..	1	..	..	..	..	..	..	..	1	..	1
Pseudo-paresis.....	..	..	1	..	..	..	..	..	..	..	1	..	1
Organic brain disease.....	..	..	2	..	2	1	..	2	1	1	5	4	9
Cerebral concussion.....	..	..	1	..	..	..	..	..	1	..	2	..	2
Locomotor ataxia.....	..	..	..	1	..	..	..	..	..	..	1	..	1
Tuberculosis.....	..	..	..	..	2	..	1	..	..	..	3	..	3
No diagnosis.....	..	..	..	..	..	..	..	..	..	..	2	..	2
TOTALS.....	51	12	43	22	37	43	15	5	11	12	159	94	253

TABLE II.—SHOWING THE FORMS OF DISEASE, AND THE RESULTS OF TREATMENT SINCE THE OPENING OF THE PAVILION, FEBRUARY 18, 1902

FORM OF DISEASE	Re-covered		Im-pro'ed		Un-im-pro'ed		Died		Re-main-ing		Total		TOTAL
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium	13	14	1	3	1	1	5	4	1	..	21	22	43
Confusional insanity.....	4	1	3	6	..	..	3	2	..	..	10	9	19
Melancholia.....	12	10	10	19	12	28	..	1	2	5	36	63	99
Mania.....	2	3	6	10	6	8	1	..	2	15	23	38	38
Primary dementia.....	1	1	3	1	6	3	..	..	2	1	12	6	18
Recurrent insanity.....	..	..	..	3	..	1	..	..	1	..	5	..	5
Chronic delusional insanity..	..	..	1	2	7	9	..	..	..	8	11	..	19
General paralysis	..	..	1	..	12	..	1	..	2	..	16	..	16
Terminal dementia.....	..	..	6	8	21	22	7	4	1	2	35	36	71
Imbecility and idiocy.....	..	..	8	3	3	2	..	..	..	..	11	5	16
Acute alcoholic delirium.....	71	5	10	2	2	..	9	1	..	..	92	8	100
Alcoholism.....	19	5	14	..	1	1	..	..	1	..	35	6	41
Drug addiction.....	1	1	1	2	..	1	..	..	..	..	2	4	6
Ptomaine poisoning.....	1	2	..	..	..	..	..	..	..	..	1	2	3
Uraemia.....	..	..	..	..	..	..	1	..	..	..	1	..	1
Eclampsia.....	..	..	1	..	..	..	..	1	..	..	1	1	2
Epilepsy.....	..	..	4	..	4	..	..	..	..	..	8	..	8
Neurasthenia.....	2	..	13	4	1	4	..	..	..	..	16	8	24
Hysteria.....	1	..	..	2	..	..	..	..	..	..	1	2	3
Chorea gravidarum.....	..	..	..	..	1	..	..	..	..	..	1	1	1
Exophthalmic goitre.....	..	..	..	1	..	..	..	..	..	..	1	..	1
Nervousness.....	..	1	..	..	..	..	..	..	..	..	1	..	1
Hypochondriasis.....	..	..	3	..	1	..	..	..	..	4	..	..	4
Pseudo-paresis.....	..	..	2	..	..	..	..	..	..	2	..	..	2
Organic brain disease.....	..	..	4	1	2	1	..	3	1	1	7	6	13
Cerebral concussion.....	..	..	1	..	..	..	..	..	1	..	2	..	2
Locomotor ataxia.....	..	..	..	1	..	1	..	..	..	1	1	1	2
Hydrophobia.....	..	..	..	..	..	..	1	..	..	..	1	..	1
Tuberculosis.....	..	..	..	..	2	..	1	..	..	..	3	..	3
Malingering.....	..	..	..	..	1	..	..	..	..	1	..	..	1
Exhaustion from jaundice...	..	..	..	..	..	..	1	..	..	..	1	..	1
No diagnosis.....	..	..	..	..	..	..	..	..	..	5	1	..	6
TOTALS.....	127	43	92	68	82	83	29	17	11	12	347	223	570

ADMISSIONS

The number of admissions was two hundred and thirty-nine. There were one hundred and seventy-four admissions the first year, and one hundred and seventy-one the second. There has thus been a large increase over the admissions of the previous years. The admissions are practically all upon a voluntary basis. The invariable reply to applications has been that the

patient, if cognizant of his surroundings, shall enter the hospital willingly. There are emergency cases of a greater or less degree of unconsciousness, in which this question cannot be entertained, and refusal to provide care would be contrary to the humane purposes of the hospital. With awakening consciousness the demand for discharge may be made, but this is infrequent, and a most encouraging feature of the ministration of the Pavilion is the co-operation of patients in whatever measures are undertaken for relief. It is not unlikely that the knowledge that forcible detention is not practiced removes the sensation of restraint and the desire to leave.

Twenty-nine patients were transferred from other wards of the hospital. Of these twenty-two were distinctly nervous cases, and seven were medical or surgical cases, complicated by nervous symptoms.

Fifty-six cases of alcoholism were under treatment during the year. Of these, thirty-eight were characterized by delirium, and eighteen others were treated for some of the various conditions incident upon excesses. Although this is relatively a smaller number than in previous years, it reveals the fact that a demand is made upon Pavilion F by victims of the alcohol habit. Delirium tremens, or so-called acute alcoholic delirium, is a morbid, and often a critical and dangerous condition. The prolonged and excessive indulgence has set in motion a pathological process characterized by the existence of symptoms independent of the alcohol; in fact, not infrequently cases of delirium tremens develop after the poison has been removed; as in injuries and acute diseases. The claim upon the good offices of the hospital made by cases of delirium tremens has been felt to be warranted, and all such cases have been received. This conception of duty has not been entertained, however, with reference to cases of drunkenness. Not infrequently requests for their admission have been made by the friends or family, who entertain the hope that by strategem or force the hospital may relieve them of a quarrelsome and disagreeable member. It is, perhaps, needless to say that the hospital executive refrains from engaging in these disputes.

CLASSIFICATION OF CASES.

The table of forms of disease has been arranged with an eye to simplicity. The Hospital report is prepared for the laity

and a too technical medical terminology is not desirable. It is, however, wise to so tabulate the records that results may be ascertained. The first five forms are generally recognized as manifestations of mental disorder presenting a reasonable prospect of recovery. It will be seen that of ninety-one patients in this group, forty recovered or improved and thirteen remained, giving a percentage of slightly over fifty whose treatment may be regarded as successful. The second group is made up of cases of mental defect or degeneracy, who are cared for in the Pavilion from expediency or necessity. The habit cases form a third class, and the list is completed by a series of nervous and general diseases in the course of which mental complications occur.

As opportunities for observation and experience increase, a closer analysis of cases becomes possible, and efforts are directed toward more exact diagnosis and prognosis. The suggestion has already been obtained that mental diseases fall naturally into two great groups. In one, are the patients who succumb to the trials, vexations and adversities of life. In the natural order of things proper management should be followed by the restoration of health. In the second class are patients who enter the world with a defect, which may remain latent, until, under the requirements of one of the epochs, as puberty, adolescence or maturity, the incompetent nervous system succumbs to the ordinary stress of events. Toward the analysis of symptoms which differentiate these two groups, much work has been done during the last few years. Under the leadership of a German clinician, Kraepelin, foreshadowed by Clouston's description of adolescent insanity, many cases hitherto classified as mania, melancholia, or primary dementia, are now regarded as unfavorable for recovery and doomed to permanent mental enfeeblement. With the proper distribution of these cases in the statistical table, it will be found that the percentage of favorable results is in every way commendatory of the work done.

DISCHARGES.

Of the two hundred and thirty patients discharged during the year, sixty-two recovered and sixty-four were improved. The percentage of cases thus distinctly benefitted is fifty-five. Since the opening of the Pavilion the percentage of patients discharged as recovered and improved has been fifty-eight.

Eighty patients were discharged unimproved and twenty died. The causes of death were: Exhaustion from delirium, three; organic disease of the brain, four; chronic nephritis, four; diabetes and gangrene, one; tuberculosis, one; alcoholism and pneumonia, one; alcoholism and railway injury, one; alcoholic multiple neuritis, one.

TREATMENT.

The general plan of treatment adopted with the opening of Pavilion F has been followed during the past year. From the first the condition presented by patients has been pre-eminently one of exhaustion, attended usually by wakefulness and often by delirium. The insomnia has been regarded as the manifestation of extreme debility, and attention had been directed to the pathological state rather than its obtrusive symptom. We have entertained a deeply rooted prejudice against hypnotic drugs, first, because, such remedies are contrary to the conception of the disease-process, and, secondly, because their action is stupefying and none has yet been offered free from disagreeable after-effects. There has been ample evidence of resort to quieting medicines before the admission of the patient. Although this practice seems to be justified and even necessitated by the exigencies of home treatment, it is not curative. Two striking indications are presented by our acute cases, first, exhaustion, and second, a toxic state, due usually to irregularities of excretion, particularly of the digestive tract. It has consequently been customary to promote elimination. This has been accomplished by purging, and by the administration of large quantities of liquids, by which the activities of the kidneys and the skin are stimulated. Not infrequently the combined amount of water, broths and milk has reached more than a gallon in twenty-four hours. By constant attendance, by persistence, and by careful study of the temper of the patient, with the added requirement of registration on the blanks prepared for their use, the nurses have attained their purpose even with hostile patients, without coercion.

In a few critical cases more active intervention has been required, and twice during the year resort has been had to forced alimentation.

SALINE INFUSIONS.

In casting about for convenient and effective measures for meeting the emergencies of practice, attention was attracted

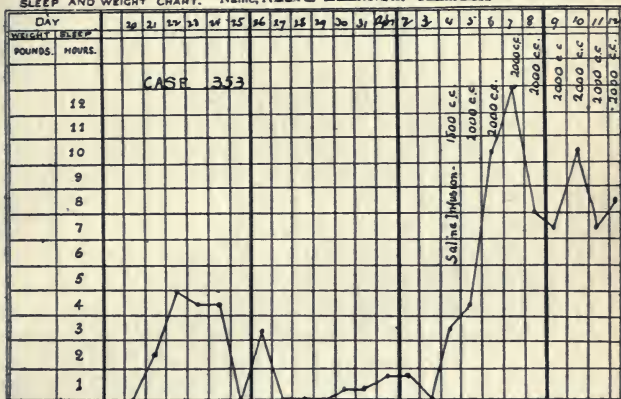
to the operation of saline infusion as practiced in the surgical department of the hospital. It was observed in a case of collapse from a severe hemorrhage, that strengthening of the pulse followed by drowsiness and sleep attended this procedure, and this suggested its possible utility in certain mental cases. It was first attempted in September, 1903. The patient was a young woman suffering with hysteria complicated by acute delirium, in whom exhaustion had reached an extreme and threatening point. The distressing symptoms of this case were relieved at once, and sleep and recuperation followed. The results in ten cases now on record show that four recovered, three improved and three died. All were desperate cases. In two of the three fatal cases organic changes in the nervous system were found after death. In addition to this numerical statement, it should be said, that whatever the ultimate result, the immediate effect of saline infusion is stimulating and sedative, and that in the fatal cases temporary benefit was generally observed and accredited.

The reason for this is not far to seek. "Normal saline solution" by which is meant water containing six tenths of one per cent. of common salt has long been known to possess a certain affinity for animal tissues. It was originally used for the preservation of tissues under microscopical examination, as these were found to retain vitality for a time when immersed in the salt solution, though rapidly perishing when only plain water was used. Later this fluid was substituted for human and sheep's blood in the operation of transfusion into veins for the restoration of function in shock and collapse, and finally the simpler operation of subcutaneous injection into the cellular tissues, from which it is rapidly absorbed into the circulation, was found equally efficient. By the use of a small needle, permitting a slow current, so that absorption and injection are simultaneous, it has been found possible to introduce as much as seventeen hundred cubic centimetres at one time, and this has been repeated twice daily.

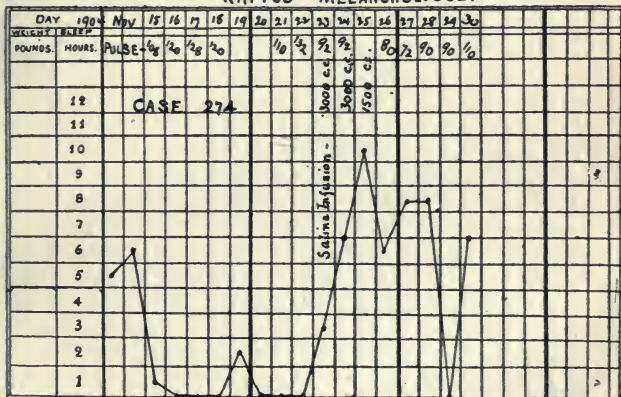
Unfortunately for this therapeutic measure a contribution was published in Germany in 1903 (Wickel, *Psychiatrische neurologische Wochenschrift*) adversely to its use. For this investigation different groups of cases were selected indiscriminately, and small quantities of the solution were used at infrequent intervals, and the operation was ironically stigmatised as an "injection cure."

ALBANY HOSPITAL-PAVILION F

SLEEP AND WEIGHT CHART. Name, ACUTE DELIRIUM-PUERPERAL Date 1904. Mar



RAPTUS MELANCHOLICUS.



In a monograph upon "Transfusion and Infusion," published in the *Wiener Klinik* of July and August, 1904, Dr. Van Amstel reviews the subject and its literature, and arranges the following summary of the indications for saline infusion:

- (1) in extreme grades of anaemia, no matter what the cause, as following severe hæmorrhages during and after child-birth, in placenta prævia, after capital operations, wounds, hæmorrhages from the stomach and lungs;
- (2) in severe losses of the body fluids, as in Asiatic cholera;
- (3) for irrigation of the human organism in (a) acute poisoning, (b) auto-intoxications, as the typhoid state, diabetic coma, puerperal fever, puerperal eclampsia, bubonic plague, and uræmia; and
- (4) as modified by Landerer, by the addition of sugar, in chronic anaemia, for artificial alimentation.

In Group (3) should be included the condition of extreme mental exhaustion with auto-intoxication of which the symptoms are acute delirium or profound stupor, with full confidence in the further intrusion of this surgical procedure into the field of internal medicine.

Finally, attention may be directed to Johnstone's English translation of Kraepelin's classical *Lectures on Clinical Psychiatry* published last year, in which the editor directs particular attention in the preface to "the use of saline solutions and transfusions." The author has used these solutions "which often have the effect of actually saving life," in insanity after acute diseases, in delirium "if imminent heart weakness threatens," in puerperal insanity, and in the final stages of general paralysis of the insane.

As a modification, it has been found possible in certain case to introduce the saline solution into the bowel instead of under the skin. At first large quantities were used, with the double purpose of absorption and cleansing, and of reducing the number of treatments. Occasionally, it has been possible to inject a smaller quantity, one pint, at frequent intervals, every two hours, with similarly good results. Upon the suggestion of Dr. Ball, of this city, these small injections were prepared at a temperature slightly below that of the human body. There are records of sixteen such cases, of whom six recovered, four were improved, four were unimproved, and two died.

CONSTRUCTION AND EQUIPMENT.

Shortly before the beginning of the Hospital year, the addition to Pavilion F, constructed by the County of Albany, was placed in service. This addition was made necessary by the disproportion of turbulent patients, for whom scant provision was originally made. The completed building has been found satisfactory in every respect, and there is now little friction in administration. A liberal supply of furniture was provided during the summer, and the rooms and wards are attractive, well-lighted, and adequately ventilated and heated. The wear and tear is necessarily greater than in the general wards of the Hospital, but it has not been necessary to seek any extraordinary repairs or improvements.

The Pavilion has suffered slightly from settling of the walls, but this defect has now apparently reached its limits, and the expectation may be indulged that the same liberality under which this departure in hospital service originated, will be displayed in fostering and encouraging its good work.

FINANCIAL STATEMENT.

Received for public patients.....	\$2,174 57
Received from private patients.....	8,787 00
Total.....	<u>\$10,961 57</u>
The number of days' treatment.....	6,895
The average income for each patient per week....	<u>\$11 13</u>

THE ENDOWMENT FUND.

The gift of five hundred dollars from Mrs. McCarthy, which was set aside as the nucleus of an endowment fund, remains untouched. It is hoped that this fund may be increased so as to yield an income for the maintenance of deserving patients. In a large city like Albany there are not infrequent cases of mental break-down resulting from overwork, worry and privation, and for them the care given by Pavilion F would effect a speedy restoration to health. Several such patients have been received, who occasionally have been found to be young men or women away from home seeking to support themselves in clerical or other positions.

ACKNOWLEDGMENTS.

The Board of Governors of the Hospital and the Managers of the Training School for Nurses have continued to show activity

and interest in the work of the Pavilion. Visitations have been regularly made, and a most helpful consideration of details, which at times must prove irksome, has always been given. The work of the nurses deserves special mention. Forbearance and patience, under the most trying circumstances, have invariably been manifested. This fact alone carries a feeling of confidence, and the Hospital management may rest assured of faithful and considerate care of all patients.

Miss Anna Dewar, the nurse in charge, who assumed her duties with the prestige of special training, merits the greatest commendation. Her position has been a most trying one. This is probably the only institution in the country for the care of mental cases, in which the attending physician does not reside upon the premises. Large credit must be given to her for the freedom from accident and complaint.

The public officials of the city and county have co-operated intelligently. They have resisted the importunities of individuals who have desired some forcible action for restraint, and have thus relieved the Hospital of many embarrassing situations and much friction. This applies especially to the Department of Charities and Corrections, under the administration of Commissioner William H. Storrs, with whom all relations have been most pleasant.

The following gifts have been received: from Mr. & Mrs. P. K. Dederick, jr., books, and subscriptions for 1905 to *The Argus*, *Munsey's Magazine*, *The Argosy*, *The Strand Magazine*, *The Ladies' Home Journal*, and *Pearson's Magazine*; from Mr. Archibald Maclay, papers and magazines; from Mrs. William B. Jones, a framed engraving and magazines; from Mrs. Gouverneur F. Mosher, a framed engraving; from Mr. Willard E. Masten, a barber's chair; from Mr. Leland Hays, twelve volumes of Kipling's works; from the Rathbone estate, six framed wall pictures; from Mrs. William L. Learned, Mrs. Frederick Tillinghast, Hon. Martin H. Glynn, magazines; from Mrs. Archibald J. McClure, Mrs. Martin H. Glynn, Mrs. George P. Hilton, Miss Kearney, Miss Nies, Miss Hoffman, Miss Gauger, flowers; from Miss Charlotte Johnson, curtains for solarium windows; from Miss Timby, curtains for book case; from Mrs. Stone, night shirts; and from Miss Flanagan, a sofa pillow.

Clinical and Pathological Notes

A Case of Aleukaemic Lymphatic Leukaemia (Leukoblastoma) Simulating Acute Hodgkin's Disease. By GEORGE BLUMER, M. D.

There is probably no group of diseases concerning the classification of which more confusion has existed than the diseases of the blood-forming organs. This confusion, which still exists to some extent, has been due to a variety of causes. Previous to the publication of Ehrlich's classical work on the blood, the classification of the different diseases of the hematopoietic system was necessarily based on criteria, which, from the modern point of view, are insufficient. In the years immediately succeeding the publication of Ehrlich's work the medical world was so dominated by his ideas, that too much study was devoted to the blood, and not enough to the blood-forming organs. In recent years there has been a growing tendency to study the diseases of this group in their relation to the changes in the blood-forming organs. Inasmuch as these changes constitute the essential lesion, and the changes in the circulating blood are secondary, and in a measure inconstant, this tendency is certainly a logical one. Another cause which has rendered confusion worse confounded is the multiplicity of names which have, in some instances, been given to single conditions. The many synonyms which have been applied to Hodgkin's disease will serve as an example. Confusion has also arisen from just the opposite condition, viz., the grouping of superficially similar, but fundamentally different, conditions under one head. The classification of various conditions under the heading of pseudoleukaemia is an example of this. That the conditions grouped under this caption do not represent a single pathological entity has long been held by some observers, and the recent studies of Hodgkin's disease by Reed¹, Longcope², Simmons³, and others, showing that this disease has a definite pathology, make it easier to differentiate clinically similar, but pathologically different, conditions. On account of the relative rarity of cases of leukaemia which simulate Hodgkin's disease, and because a considerable number of such cases must be studied as a preliminary step to intelligent classification, it seems advisable, for the present at any rate, to record all cases. The following case occurred in the private practice of Dr. A. W

Elting during my service as Director of the Bender Laboratory. I am indebted to Dr. Elting for the opportunity to study the case, and to my successor Dr. R. M. Pearce for the use of the Laboratory records and the pathological material.

W. H. K., male, aged 19, a student, consulted Dr. Elting, August 5, 1902, complaining of general weakness.

Family History. There is no hereditary disease in his family. His parents, and brothers and sisters are well.

Past History. He has had the usual diseases of childhood. He had a severe attack of scarlet fever at the age of nine, but does not remember any complications. He has always been strong and healthy. He smokes a pipe and cigarettes, and inhales the latter. He does not chew tobacco. He takes an occasional drink. He denies venereal disease, but has overindulged in sexual intercourse.

Present Illness. About the middle of May 1902, he was thrown from a tallyho and struck on his back. He was a little lame for a time, but had no serious trouble. During the latter part of May he began to feel weak and used up. He became short of breath, and had frequent attacks of nausea and vomiting, so that it was difficult for him to retain his food. He came home from school June 5, and has been worse since his return. His weakness has increased until at present (August 5th), he cannot walk a block without being used up. Exercise causes headache and shortness of breath. He has had a slight cough for a month or more, and slight expectoration. He has had night sweats irregularly for the last ten days. For the last two weeks swelling of the feet and ankles has been present. He is able to eat a little every day, but has only a slight appetite. Lately he has had a slight stitch in the left side below the ribs. He sleeps well. Micturition is somewhat more frequent than normal. The bowels are somewhat constipated. He has lost about 30 pounds in weight in the last month and a half. About June 1st he noticed a swelling on the right side of the neck just behind the jaw. This partly disappeared under treatment, but has gradually returned. He states that in June several small lumps also appeared in the neck, especially near the scalp, but these have disappeared. He has also noticed for a few weeks slight swelling in the region of the epitrochlear glands. There have been no hemorrhages from any part of the body.

Status Presens. The patient is a heavily built young man, weighing at present 190 pounds. The skin and mucous membranes are quite pale. The conjunctivae are normal. The tongue is clean. The tonsils are slightly enlarged. The pulse is ninety and rather weak. The area of cardiac dullness is not increased. The heart sounds are rather soft and weak, but clear. The lungs are normal. The abdomen is full, slightly more so in the upper part; the lower part is symmetrical. There is some bulging below the costal margins on both sides. There is no dullness in the flanks. On palpation there is greatly increased resistance over the upper part of the abdomen, and a tumor can be made out corresponding to the greatly enlarged liver. The lower edge of the liver can be felt extending obliquely from a point four centimeters below the left costal margin in the mam-

miliary line downward and to the right to a point just above the level of the umbilicus. The edge of the liver is rounded. The liver dullness above is at the third space in the right mammillary line. The spleen can be felt seven centimeters below the left costal margin at the level of the umbilicus. On percussion the dullness extends upward to the fifth rib in the left axillary line. The edge of the spleen is rounded. There is some sensitiveness over both the liver and the spleen. The other abdominal viscera are normal. Rectal examination is negative. The bones and joints are normal. The patella reflexes are normal. The lymph nodes on the right side of the neck, both anterior and posterior, as well as those in the supra-clavicular region, are considerably enlarged. Some of them are the size of almonds, movable, not adherent. The nodes on the left side are also enlarged, as are the submaxillary and the submental. The axillary, inguinal, and epitrochlear glands are enlarged, but less so than the cervical. All of the glands are fairly movable but not sensitive.

Urine. Amber color, specific gravity 1012, no albumen, sugar or bile. Microscopically an occasional epithelial cell, and an occasional leucocyte. No casts seen.

Blood.

Red-corpuscles.	3,656,000
Leucocytes.....	8,000
Hb.	54%

Differential Count.

Polynuclears.....	8.3%
Large Mononuclears.....	45.4%
Small Mononuclears....	46.3%

The patient remained in the same condition until five days later when he was taken quite suddenly with agonizing pain in the right side over the region of the liver. Physical examination showed no cause for this. The patient became gradually weaker, the glands enlarged slightly, and finally difficulty in respiration developed. The temperature varied between 98.8 degrees and 102.6 degrees Fahrenheit. He died eight days after he was first seen by Dr. Elting.

The autopsy was made four hours after death in moderately warm weather. The following notes are abstracted from the protocol:

Heart. The pericardium contains about twenty cubic centimetres of slightly bloody fluid. Both layers of the pericardium are smooth and glistening. The cavities of the heart are distended with fluid blood, and red and white post-mortem clots. The endocardium and valves are normal, as is the aorta beyond the valves. The right ventricle averages five millimetres in thickness, the left ventricle thirteen millimetres. The heart muscle is normal in consistency and color.

Lungs. The pleural cavities contain approximately fifty cubic centimetres of slightly bloody fluid. The lungs are free from adhesions. The upper parts of both lungs are normal except for an occasional patch of atelectasis. The lower lobes on both sides are almost completely atelectatic. The bronchi contain a considerable amount of frothy fluid, but are otherwise normal.

Liver. The organ measures 37 x 37 x 15 centimetres, and is of almost

board-like consistency. The edges are rounded, the surface paler than normal, and somewhat uneven. The cut surface is pale and has a mottled appearance. The liver appears to be densely and diffusely invaded by new tissue. The connective tissue framework is greatly increased in amount and of a pearly white color. The intervening tissue is light yellowish-brown. The bile passages are normal.

Spleen. The organ projects seven centimetres below the costal margin in the mammillary line. It measures $28 \times 19 \times 9$ centimetres and is adherent to the diaphragm and parietal peritoneum by fine moderately firm adhesions. The consistency is moderately firm. The capsule is thickened here and there, and there are small subcapsular hemorrhages. The cut surface is granular, and slightly lobulated. The pulp is markedly increased. The malphigian bodies are tremendously enlarged. The trabeculae are not perceptibly thickened.

Kidneys. The left kidney measures $15 \times 9 \times 6$ centimetres. The capsule strips off readily leaving a smooth surface decidedly paler than normal. The consistency is almost board-like. On section the kidney markings are fairly well preserved. The cortex averages twelve millimetres in width, and has a pale opaque appearance. The glomeruli can be distinctly made out. The pelvis and ureter are normal.

The right kidney measures $15 \times 8 \times 5$ centimetres. The capsule strips off readily. The surface is pale and irregularly mottled, and presents some well-marked grayish areas extending throughout the entire cortex, evidently lymphatic deposit. Otherwise this kidney resembles its fellow.

Adrenals. Both organs are normal in appearance.

Genitalia. The bladder contains about 250 cubic centimetres of turbid amber colored urine. The mucous membrane is normal. The vesiculae seminales, prostate, and testicles are normal.

Stomach. The organ contains a considerable amount of foamy fluid. The mucosa, aside from a few hemorrhagic areas, is normal.

Intestines. The mucosa of the large and small intestines is pale, and normal in appearance except for slight enlargement of the solitary follicles. The Peyer's patches are not enlarged.

Lymph Nodes. There is marked enlargement of the cervical glands chiefly on the right side. The glands are movable and moderately soft. There is marked enlargement of the submaxillary, submental, axillary, epitrochlear, femoral, and inguinal glands. These glands vary in size from that of a pea to that of a pigeon's egg, and are not matted together to any great extent. The bronchial and tracheal glands are tremendously enlarged, and restrict to an extreme degree the space at the upper margin of the thorax. Some of these glands are as much as five centimetres in diameter. On section they present an irregular, somewhat mottled appearance, they are distinctly more opaque and grayer than normal, and also firmer in consistency. The distinction between the cortex and the medulla of the glands can no longer be made out. Both the trachea and the oesophagus are compressed by the enlarged bronchial glands. The glands in the hilum of the liver, and those in the region of the gall bladder are markedly enlarged. The retro-pyloric lymphatic glands

are markedly enlarged, some of them being as much as five centimetres in diameter. The retro-peritoneal glands are also enlarged and similar in appearance to the others. The mesenteric glands vary in size from a pea to a hickory nut. The anterior mediastinal glands are enlarged. The omental glands are not enlarged. The iliac glands are also enlarged. On section all of the enlarged glands present the appearances already described.

Bone-Marrow. The marrow of the ribs appears normal to the naked eye.

The histological lesions were as follows:

Heart. The heart muscle is normal in every respect.

Lungs. A great part of the lung tissue is normal. There are present in places areas of oedema, and in other places areas of atelectasis. The most marked change, aside from these, consists of a cellular infiltration in the neighborhood of the blood vessels. The cells form a sheath about all of the larger, and many of the medium-sized and smaller vessels. In some instances this sheath is several times the thickness of the vessel wall. The infiltrating cells are rounded or oval, and about the size of the lymphocytes of the blood or a little larger. They have a small amount of protoplasm, generally oxyphilic, at times slightly basophilic, and the nucleus shows a well marked chromatin network, but hardly ever a nucleolus. Karyokinetic changes are quite common among these cells. The cells seem to infiltrate the connective tissue surrounding the vessels, but cannot be definitely made out to be in spaces. Similar collections of cells are seen in the deeper layers of the pleura.

Liver. The organ shows a massive cellular infiltration in the region of the portal spaces, and, to a lesser extent, in the interior of the lobules. The connective tissue of the portal spaces is split up into fine strands by the cells, and the bile ducts are completely surrounded by them. The cells are similar to those already described as surrounding the pulmonary vessels, and like them not infrequently show indirect division. Where the cellular infiltration affects the interior of the lobules the infiltrating cells are seen to lie between the liver cells and the endothelium of the capillaries, presumably in the lymph spaces.

Spleen. There is marked hyperplasia of the malpighian bodies, the proliferated cells being similar to those in the lung and liver. A similar, but less extensive infiltration is present in the pulp. There is hyaline degeneration of the walls of many of the splenic vessels.

Kidneys. The organs show a massive infiltration with cells, especially around Bowman's capsules, and between the convoluted tubules. The medulla is relatively free from cells except immediately about the larger blood vessels. The infiltrating cells are the same as those described elsewhere. In no place do they lie in the blood vessels, but are between the parenchymatous cells of the kidney and the blood vessels, sometimes in definite spaces. These spaces seem to be the lymph spaces of the organ. Cross sections of tubules often show a regular collar of infiltrating cells which pushes aside the blood vessels. The glomeruli show no changes. The kidney cells show a moderate degree of cloudy swelling.

Lymph Nodes. The nodes throughout the body show similar lesions. The normal structure is no longer to be made out, all distinction between cortex and medulla being lost. The entire gland is made up of cells similar to those infiltrating the organs. The stroma of the gland is seen here and there as fine strands. The lymph sinuses are no longer to be made out. There is no proliferation of the endothelial cells, no giant cell formation, and no eosinophiles. The lymphatic apparatus of the small intestine shows the same changes in a lesser degree.

Bone-marrow. The marrow of the ribs is almost completely lymphoid. Hardly any cells with granular protoplasm are to be made out. The cells which are present are similar to those seen infiltrating the organs. The number of red cells, both nucleated and non-nucleated, is greatly reduced.

The clinical picture presented by this case is similar to that of cases which have been described as acute Hodgkin's disease. The blood picture is not, as we shall see, that of Hodgkin's disease, nor is the pathological picture, which is essentially that of lymphatic leukaemia.

Considering the symptoms and physical signs alone it would be impossible to distinguish such a case from one of true Hodgkin's disease. The general glandular enlargement, the swelling of the liver and spleen, the slight fever, the progressive weakness and dyspnoea, and the loss of weight are common to both conditions.

The blood picture of Hodgkin's disease, if we judge by the reports of Reed, Longcope, and Simmons, is to be clearly differentiated from that of aleukaemic lymphatic leukaemia. Assuming that the lesions described by these authors are characteristic, and the number of cases studied leaves little doubt of this, we must revise, to some extent, our conceptions of the blood picture of Hodgkin's disease. In many of the text-books on hematology, and in some of the magazine articles, it is stated that the differential count in this condition may show a relative increase in the mononuclear elements. A study of the blood-counts recorded in the articles of Reed, Longcope, and Simmons shows that when such a relative increase in mononuclear occurs it is slight in degree. As a matter of fact it is very much the exception, and never even approximates in degree the preponderance of mononuclears observed in the case here recorded. In most of the cases of Hodgkin's disease the relative increase was in the polynuclear neutrophiles, which in some instances constituted over ninety per cent. of the leucocytes. Whether in all cases of aleukaemic lymphatic leukaemia the mononuclear

preponderance will be present is problematical, and this point can not be decided until more cases have been studied. There is, in fact, evidence to show that such a mononuclear preponderance may not be present in all stages of this condition. In a case recorded by Wende, and classed by him as lymphatic leukaemia apparently developing out of Hodgkin's disease, the differential count early in the disease did not show any mononuclear preponderance, though this appeared later. The pathological lesions in this case, as Williams' careful report clearly shows, were those of lymphatic leukaemia. It seems highly probable that if the pathological changes in the few similar cases on record could be restudied in the light of our present knowledge, they, too, would be shown to be cases of aleukaemic leukaemia.

There can be little doubt that Hodgkin's disease is a distinct pathological entity, but whether it will be possible in all instances to differentiate it clinically from aleukaemic leukaemia is open to question. The recent students of Hodgkin's disease are perhaps premature in classing it as a distinct clinical entity. More cases of aleukaemic leukaemia must be studied before this can be decided. It seems probable, however, that in advanced cases the differential blood-count will enable the clinician to distinguish the two conditions from one another. The pathological relation between the two conditions is still in doubt. Reed and Simmons consider that there is no relationship between Hodgkin's disease and leukaemia, the former observer considering the lesions of Hodgkin's disease to be inflammatory in nature. While it is true that the lesions of Hodgkin's disease very strongly resemble inflammatory changes, they also present many of the characteristics of new growth. It is possible that they represent a form of leucoblastoma originating from the leucoblasts of lymphatic tissue. Whether this proves to be the case or not, the fact remains that the two diseases can be differentiated histologically, and probably clinically also.

REED. *The Johns Hopkins Hospital Report*, Vol. x, 1903.

LONGCOPE. *Bulletin of the Ayer Clinical Laboratory*, No. 1, 1903.

SIMMONS. *Journal of Medical Research*, Vol. ix, 1903.

WENDE. *American Journal of the Medical Sciences*, 1,901,

Editorial

Aculeatociliatus
 Acysturotrophia
 Adamicus
 Aerodiaphthoroscope
 Amorphopygagra
 Anomogangliotrophy
 Brassy-eye
 Burmah Head
 Button, Chlumsky's
 Colpocystoureterocystotomy
 Cryptomerorrhachischisis
 Dymorphosteopalinklast
 Hepaticocholecystostcholecystenterostomy
 Hot-foot
 Phossy Mouth
 Shoulder, Noisy
 Smile, Nasal
 Trolley-eye
 Tschetsik
 Zootrophotoxism

A Dictionary of New Medical Terms

GEORGE M. GOULD

Melancholia Much attention has been given in the last few years to the relations of mental disturbance with **and Auto-** auto-intoxication, and the tendency has been **Intoxication** toward a liberal interpretation of the latter condition as an etiological factor. Some investigations conducted by Dr. Arthur A. D. Townsend and reported in the *Journal of Mental Science* for January, 1905, under the title of "Mental Depression and Melancholia Considered in Regard to Auto-Intoxication, with Special Reference to the Presence of Indoxyl in the Urine and its Clinical Significance," are well worth attention.

By "auto-intoxication," the author indicates toxins evoked within the body as a result of disordered metabolism, first such as takes place in chronic Bright's disease, myxoedema diabetes, etc., and, secondly, in the contents of the gastrointestinal tract. Dr. Townsend deals only with the second division, and believes that a large proportion of cases of melancholia are due to auto-intoxication resulting from the absorption of toxins from the alimentary tract, the symptoms in question being a foul breath, coated tongue, indifference to and often refusal of food, marked constipation, foul stools, anaemia (varying in degree), a sallow, dirty skin, profuse perspirations of offensive odor, skin irritations, eruptions, disorders of sensation, often leading to flesh picking, and headache. These signs, or some of them, have been found in states of mental

depression, associated with the presence in the urine of indoxyl, in greater or lesser excess.

The author's observations as to the presence of indoxyl in the urine of the insane lead him to the opinion that it has considerable clinical importance. The reasons are:

(1) that in excess it indicates abnormal putrefactive processes in the alimentary tract, such processes resulting in the formations of toxins;

(2) that the putrefactive process indicated by the amount of indoxyl may be primary and causative;

(3) should these putrefactive processes be found to be merely secondary, and only to be considered as the result of disordered metabolism consequent upon change in the central nervous system, they still have considerable importance, as indicating toxaemia.

Two series of cases are reported, acute melancholia and acute mania, from which it became evident that indoxyl is excreted in excess in depressed states, while in maniacal conditions it is only excreted in normal or less than normal amount.

The author used various drugs with the purpose of controlling putrefactive changes in the alimentary tract, as calomel in small doses, salol, urotropine, naphthaline, creosote, but without appreciable effect in the amount of indoxyl excreted. It is apparent we are without an efficient intestinal antiseptic. The only treatment of value was free purgation and an exclusive milk diet.

To recapitulate:

(1) In depressed states indoxyl is excreted in excess.

(2) Patients excreting indoxyl in excess exhibit symptoms and signs of toxaemia.

(3) In states of mental elation there is seldom any increase, the amount excreted being normal or less than normal.

(4) In some states of mental alteration indoxyl is excreted in excess during melancholia and maniacal phases.

(5) The more severe the mental attack, the greater excess of indoxyl.

(6) The greater the excess of indoxyl, the more marked are the symptoms and signs of toxaemia.

(7) Mental recovery was preceded by the reduction to normal of the amount of indoxyl excreted.

Scientific Review

CYTOLOGICAL DIAGNOSIS OF SEROUS FLUIDS

Owing to the difficulty which has long existed in the determination of the exact etiology of the so-called idio-pathic pleurisy with effusion any method which has for its object a ready solution of this problem would seem to be worthy of careful trial and consideration, especially when it is as simple and gives such promise of success as the examination of the cellular content of such effusions, a procedure called "cytodiagnosis."

Formerly such pleurisy occurring in otherwise healthy adults, often following exposure, were considered to be due to the action of the cold, and were, therefore, spoken of as pleurisy *a frigore*. With the increase in our knowledge of the action of bacteria in the causation of disease this early idea of the etiological effect of cold seemed at least inadequate, and has been gradually abandoned even as we have been forced to abandon it as the basal causative factor in pneumonia. The first suggestion that these pleural effusions were tuberculous was made in France, and has steadily gained ground in that country to the point of universal acceptance at the present time. In this country this opinion has spread more slowly, but owing to statistics upon large numbers of clinical cases, and to more careful study of individual cases with this thought prominently in mind, the idea is here also becoming all but universally accepted that at least the far greater number of such pleurisy are tuberculous.

Proof of the tuberculous nature of these pleurisy is often hard to obtain. Rarely have we the opportunity of studying such cases post-mortem, at least in the early stages, and the published records of such autopsies are comparatively few. Kelch and Vaillard found tubercles upon the pleurae of all of sixteen cases of acute pleurisy examined by them. They have collected from the literature records of post-mortem examinations in 147 cases of pleurisy; of these 113 were tuberculous, in nine there was coexisting tuberculosis of other organs, but the condition of the pleurae in this respect was not mentioned, and in only twenty-five was the examination of the pleurae negative for tuberculosis.

Clinical reports of the ultimate outcome of cases of idiopathic pleurisy are even more convincing. Fiedler reports that of 112 cases, ninety-one (eighty-one per cent) were either dead of tuber-

culosis or else showed definite signs of the disease at the end of two years after their attack. Lemoine reports that of twenty-eight cases, eighty-one per cent later became definitely tuberculous. Richochon, 100 per cent, at the end of only three years. Bowditch reports ninety cases of which thirty-two, or thirty-eight per cent, died of tuberculosis. Cabot's more recent statistics of 152 cases show only fifteen per cent definitely tuberculous at the end of fifteen years after their attack.

Examination of the pleural exudate has been carried out in many ways, but always with a view to finding the tubercle bacillus, in stained preparations of the fluid, in cultures, by animal inoculations, by serum reactions and more recently by a process known as inoscopy. In this method the fibrin clots in which the tubercle bacilli are theoretically entangled, it digested in artificial gastric juice, the residue centrifugalized and stained for tubercle bacilli. This method which was introduced by Jousset in 1903, is tedious and only partially successful as is shown by the results of the work of Kormoczi. Furthermore it is only applicable to certain cases in which the effusion coagulates spontaneously, as no satisfactory method has been devised for the artificial coagulation of such fluids. Tubercle bacilli are almost never found in stained preparations of serous fluid, even when it is centrifugalized, probably on account of the relative fewness of the organisms present; they are, however, easily demonstrated in cases of pyothorax and pyopneumothorax when secondary to pulmonary tuberculosis. Cultures are also usually equally barren of positive results, and even when positive require considerable delay, which is often valuable time lost. Animal inoculations also require much time, and in cases almost positively tuberculous often result in failure. This is shown by the results obtained by Netter, Eichhorst, Le-Damany and others as well as those of Musgrave cited below. The tuberculin reaction, when present, only shows that a tuberculous focus exists somewhere in the body and does not prove that it is the pleura that is the seat of the disease. Thus it is that the method of cytodiagnosis promises to be of so much value, as it is easily and quickly done and with a few well marked restrictions seems to be positively diagnostic.

As early as 1882 Ehrlich and Quincke studied the cellular content of cancerous pleurisies; they were followed shortly after by Dieulafoy, and Auchè and Carriere, who studied particularly

the cells found in haemorrhagic effusions. In 1896 Winiarski, and Korczynski and Wernicki pointed out that pleural effusions which remained serous contained lymphocytes almost exclusively, and that a predominance of polymorphonuclears indicated a tendency to the development of a purulent effusion, or the cancerous nature of the original lesion. To Widal and Ravaut,¹ however, belongs the credit of having first pointed out the true value of such examinations. They, too, first assigned the name cytodiagnosis to the method. To them and to other workers, as Barjon and Cade, Dopter and Tanton, A. Wolff, Courmont, Arloing and Patella and more recently Naunyn and Lewkowicz² abroad, and Musgrave³, Bunting⁴ and others in this country are due our more extended and accurate knowledge of the subject. Many investigations have been carried out, and the literature is full of an ever increasing number of articles on its various phases and the results of examinations of fluids from various sources, pleura, peritoneum, pericardium, cerebro-spinal canal, etc.

Methods of Examination. A portion of the fluid, best before coagulation has taken place, is rapidly centrifugalized and from the sediment thus obtained films are made and stained with any one of several methods; haematoxylin and eosin, eosin and methylene blue, Ehrlich's triacid stain, or what is probably the best method, Jenner's stain or the modification of the latter devised by Wright. A differential count is then made of the cells found. Further than this it is important to test the specific gravity and the albumen content of the fluid, as will be seen below.

The cells found are of one or more of the following types:

1. Red blood corpuscles. These are found in almost all fluids, even in those which remain frankly serous, and except when they are the predominating cell or occur in enormous numbers they are of no especial significance.

2. Polymorphonuclear neutrophiles. They present the usual characteristics of these cells when seen in blood films, except for frequent degeneration in old effusions.

3. Lymphocytes. Small and large. The latter are often indistinguishable from the endothelial cells.

4. Endothelial cells. These cells occur either singly or in plaques of three to eight or more cells. They are much larger than the ordinary leucocyte, but are apt to become partially

disintegrated and it is in this condition that they are sometimes confused with the large mononuclears. They have a single round nucleus and the cytoplasm is more granular. These cells are often phagocytic and are found to contain entire or fragmented leucocytes, bacteria or detritus. These cells are also hard to distinguish from the cancer cells.

5. The cancer cells also occur singly or in sheets. They are usually somewhat larger than the endothelial cells, are not phagocytic, and in them may often be seen mitotic figures.

It is perhaps needless to point out the origin of these various cells. The red blood corpuscles and the polynuclears are obviously from the blood stream, and the endothelial cells and cancer cells are equally plainly desquamative elements from the endothelial lining of the cavity. As for the lymphocytes, they, too, are evidently derived from the blood, occurring as they do in association with other haemotogenous elements. Other theories, however, have been advanced, for example, that they are derived from the subpleural connective tissue cells or that they are the remnants of endothelial nuclei or of degenerated polynuclears. In any case they are evidently the same cell as the small mononuclears which infiltrate all tuberculous tissue. Whether they are called forth by a special chemotactic influence or are merely an evidence of chronicity of the inflammation are questions which will not be discussed here.

Animal experiments are so far of little help in this matter, for though the injection of tubercle bacilli into the pleurae of dogs and guinea pigs produces an almost pure lymphocytic exudate, which is sharply differentiated from the polynuclear exudate formed by the similar injection of ordinary pyogenic cocci, yet sterile exudates produced by aleuronat injections have also the lymphocytic formula.

The importance of these various elements is by no means equal, and in all cases the principal interest is attached to the polymorphonuclears, the lymphocytes and the endothelial cells. As they occur in varying relative frequency in different conditions, the cellular formula in any given case is classified according to the predominating cell present, *e. g.*, an exudate showing a larger percentage of lymphocytes than of other cells is said to have a "lymphocytic formula." From a study of the formulae in their series of cases Widal and Ravaut in their original contribution drew the following conclusions:

1. A lymphocytic formula is always present in tuberculous cases. 2. A polynuclear formula is always seen in pleurisies caused by the pyogenic organisms; the "septic pleurisies" of Ravaut. 3. An endothelial formula is always present in mechanical pleural effusions or transudates. In a later contribution Widal and Ravaut modified somewhat their conclusions in regard to tuberculous pleurisies by dividing them into two classes, the first including the true idiopathic serous effusions in patients with no other signs of tuberculosis, and the second those succeeding a demonstrable pulmonary lesion due to tuberculosis, as shown for instance, by the presence of tubercle bacilli in the sputum. In the first class the lymphocytic formula was always present, often the lymphocytes were the only cells present, though they noted in early cases a few polynuclears which were ascribed to a slight secondary infection; they never found endothelial cells. In the second class polynuclears were often present in large numbers; in some cases they were even the predominating cell.

These conclusions have been confirmed in greater part by all subsequent workers in this field, but certain necessary modifications have been pointed out by some writers. A. Wolff, and Barjon and Cade showed that in the first few days of the effusion polynuclears are constantly present in large numbers, but that later they disappear almost completely; they cite cases showing this change. They state that the number of these cells present depends apparently not only upon the time after onset that the fluid is examined, but also upon the acuteness of the attack and the intensity of the reaction. They also show that endothelial cells are sometimes present at the beginning of the effusion but that they rapidly disappear. The presence of these cells at first is probably due to a slight desquamation consequent upon the inflammatory reaction, but a further desquamation is prevented by the formation of a pseudo-membrane upon the surface of the pleura. A later examination of such fluid would clear the diagnosis. The same findings have been confirmed by Naunyn¹⁸, who in turn adds a further modification to the conclusions of Widal and Ravaut. He finds that in long standing transudates or toward the end of an acute infectious process, especially when mild, the lymphocyte may be the predominating cell present. Such cases are rare and are not likely to be confused with a tuberculous process. In the first instance the

specific gravity and the amount of albumen present would be deciding factors in the differential diagnosis, and in the latter the clinical history would be of great help.

In the case of serous effusions secondary to a tuberculous pulmonary lesion, as well as in analogous hydropneumothorax or pyothorax, the cytological picture is less sharp. Though the lymphocytic formula is sometimes present, more often is found a great mass of necrotic cells and detritus among which the distinguishable cells are mostly polynuclears. This picture is probably due to a mixed infection and we have, therefore, a combination of the tuberculous formula and that of the septic pleurisy or that of ordinary purulent collections.

Pleural effusions following pneumonia, or due to the streptococcus, the staphylococcus, the typhoid bacillus, etc., all have practically the same leucocytic formula, a marked predominance of polymorphonuclears, a few endothelial cells, singly or in groups, often phagocytic, especially in the pneumococcic form, usually some bacteria and detritus. A small percentage of lymphocytes may be present, or even a large percentage in some cases, as pointed out above. In the streptococcic form the polynuclear percent is much larger than in the effusions due to organisms of lesser virulence. Such serous effusions usually pass rapidly into frank purulent collections in which the cytological picture is practically universally that of more or less necrotic polymorphonuclear leucocytes, bacteria and detritus.

Mechanical Effusions or Transudates. Typical effusions of this class are those associated with chronic cardiac or renal disease. We have seen above that according to Widal and Ravaut, the diagnostic formula in this condition is that in which the endothelial elements predominate especially when they occur in plaques or sheets. They state that the presence of these plaques is sufficient for a diagnosis of a non-tuberculous condition even when the effusion contains as well a large number of lymphocytes or polynuclears. Later researches especially by Barjon and Cade, Naunyn and others have shown that although this is in the main true, yet some transudates contain a large number of either lymphocytes or polynuclears, particularly the former; the number of these cells increases proportionally to the duration of the effusion. If a secondary infection of such fluid occurs, as from an infarct, a well marked polynuclear leucocytosis is seen; however, in such contingency the resulting condition

would be an acute septic pleurisy and the cellular formula would be as before described for that condition. In the cases following infarcts the exudate is usually haemorrhagic, as is shown by Barjon and Cade, and Bunting. The former writers state that though the fluid contains a large number of polynuclears there is in such cases little tendency to the formation of a purulent exudate, resembling in this respect the typhoid and so-called rheumatic pleurisies. That endothelial cells, singly, or in plaques, occur in other conditions has already been shown, but usually they are found only in the early stages of acute septic, or tuberculous pleurisies.

Thus it will be seen that a preparation from an old pleural transudate will often resemble closely that from a tuberculous effusion, but it is a differential diagnosis not often called for, and in such cases the specific gravity and albumen content of the fluid would be of great assistance. Runeberg⁵, in 1897, pointed out the great difference in the amount of albumen present in transudates and exudates, and that the specific gravity depends almost entirely directly upon the albumen content has been pointed out by Reuss,⁶ and Hoffman,⁷ who have shown that the salts and extractives vary but slightly in amount in fluids of this nature. The upper limit usually set for the specific gravity of transudates is 1.012, any fluid having a higher specific gravity than that is considered to be probably an exudate. A similar dividing line between transudates and exudates in the amount of albumen present is 2.5 per cent. These figures may, however be somewhat modified by various influences.

Pleural effusions caused by lesions in neighboring organs have usually a polynuclear formula, as in the cases of Ravaut, and Musgrave, both associated with an abscess of the liver.

Effusions in the pleural cavities caused by carcinoma of the lung or pleura show immense numbers of endothelial or cancer cells, usually present in plaques, and many of them showing mitotic nuclear figures. Rarely these cells are not very abundant. They are usually accompanied by large numbers of lymphocytes which occur in far greater proportion than in simple transudates. The specific gravity and albumen content are those of exudates.

Pleural fluids containing a large percentage of eosinophiles have been noted by Barjon and Cade,⁸ Ravaut,⁹ Miller,¹⁰ Carter,¹¹ and Vargas-Suarez,¹² in all twelve cases. This con-

dition occurs independently of circulatory eosinophilia. The eosinophilic percentage often exceeds fifty per cent., in Carter's cases it reached the startling figures of seventy and two-tenths and eighty-seven and five-tenths per cent. respectively. The phenomenon has been noted in various pathological conditions, and no suitable explanation has so far been offered for it.

Wolff* has reported a pleural exudate in which a basophilia was present.

In conclusion I wish to summarize as briefly as possible some recent articles dealing with this subject.

Stassewicz¹³ reports upon the examinations of pleural fluids from fifty-four patients of which forty-three were definitely tuberculous. He finds in the primary tuberculous pleurisy a lymphocytic predominance of ninety per cent. together with very numerous red blood corpuscles. Endothelial cells are never more than ten per cent. even in the early stages of the disease, and polynuclears not more than one per cent., except in the first few days of the effusion when they may predominate. In several cases of nephritic effusion the endothelial elements occurred in as large proportion as ninety per cent., in some few cases with lymphocytes up to twenty per cent; polynuclears were not found in these cases; in all, formed elements were very scarce. In three cases of septic pleurisy he found a mixture of lymphocytes, polynuclears and endothelial cells; the exact percentages are not given. He concludes that though no one type of cell is characteristic for any class of pleurisy, a predominance of any type has a certain important influence upon the diagnosis. He considers the joint occurrence of lymphocytes and erythrocytes as indicating tuberculosis, a mixture of all types as a septic lesion and a predominance of endothelial cells in a fluid very poor in cellular content as probably a nephritic exudate.

Ketly and von Torday¹⁴ report upon forty-two cases of pleural exudate. They conclude that in acute cases lymphocytes are characteristic of a tuberculous process, but that in chronic cases the differential diagnosis between tuberculosis and transudates is often difficult, though in the latter endothelial cells are more common. They are particularly numerous in the early stages of transudates. Jacobsohn¹⁵ reports upon ten cases controlled by injections into guinea pigs and one post-mortem examina-

* Cited by Miller.

tion. All were tuberculous, and all showed exclusively lymphocytes and erythrocytes. Two cases of empyaema showed only neutrophilic cells. Steinbach¹⁶ finds lymphocytes characteristic of all effusions due to tuberculosis in whatever cavity they may be. He, however, advises the diagnosis of tuberculosis to be made only when the lymphocytic formula of the fluid is taken into consideration with other signs and symptoms.

Vargas-Suarez¹⁷ reports examinations of fourteen cases of tuberculous pleurisy, three of cancer of the lung or pleura, and one of a transudate in a chronic anasarca. His conclusions are as given by the others. He states that in his opinion the overwhelming majority of the lymphocytes are true lymphocytes of the blood which have wandered from the blood current, and are not products of degeneration, though such cells do occur in small numbers. This is the conclusion, too, of Barjon and Mazuel¹⁷, who have attacked the problem from the standpoint of vital staining of the cells by a new as yet unpublished method.

In this country several important papers have appeared, especially those of Bunting⁴ and Musgrave⁵, the latter presenting the largest series of pleural exudates yet reported and those most carefully examined. Bunting reports upon twenty-four cases divided as follows: idiopathic serous pleurisies, fifteen; pyopneumothorax secondary to tuberculosis of lungs, two; empyaema following pneumonia, one; exudate in a chronic cardiac case, probably associated with an infarct, one; exudate following slight involvement of lung, one; transudates, three. Though the number of cases is too small to justify any sweeping conclusions, yet the results are striking, confirming as they do all the earlier work. The cases of idiopathic pleurisies were examined at varying periods of time and the results show clearly (as pointed out by Barjon and Cade), the onset with a fairly high percentage of polynuclears which disappear entirely at about the beginning of the third week. Scattered and isolated endothelial cells were found in these cases, but never in plaques such as were found in the transudates. A considerable number of red blood cells were found in these cases. The specific gravity findings were as outlined above.

Musgrave has examined the fluid from seventy-two cases of pleurisy. He divides them as follows: 1. tuberculous cases, fifty-one; 2. acute infectious cases, twelve; 3. transudates, five; 4. cancerous cases, three; 5. unclassified, one. The tuberculous

cases are subdivided into primary, forty-six, and secondary, five. Of these tuberculous cases twenty-eight (thirty-four and five-tenths per cent.), were positively proven so by various methods—tubercle bacilli in the sputum, five; animal inoculations, seventeen; inoscopy, ten; tuberculin reaction with subsequent operation, one; two cases were proven by both inoscopy and animal inoculation, though of the other eight positive by inoscopy none showed tuberculosis by animal inoculations.

Of the forty-six primary cases, twenty-three were proven tuberculous; of these twenty-two showed a marked predominance of lymphocytes, in the other the necrotic condition of the cells made the differential count impossible. Of the twenty-three cases not proven to be tuberculosis, twenty-two showed the same lymphocytic formula; of these five were probably not tuberculous (one was late effusion with myocarditis, one occurred during the course of lymphatic leukaemia, one was a metapneumonic effusion, and two were probably mild infections, agreeing with Naunyn's findings quoted above). Of the secondary tuberculous cases, four showed the necrotic polynuclear formula, and one the lymphocytic formula. In two of them the diagnosis of effusion secondary to pulmonary tuberculosis was made and subsequently verified by the finding of tubercle bacilli in the sputum.

Of the acute infectious cases—with pneumonia, six; with infarct of lung and subsequent consolidation, one; with liver abscess, one; traumatic, one; unknown cause, three—all showed a predominance of polynuclears. The cancerous cases showed a relatively large amount of endothelium, many cells in plaques with a predominance of lymphocytes. The albumen content and the specific gravity indicated an inflammatory process.

The transudates all showed numerous endothelial cells and few leucocytes or lymphocytes, the latter predominated when present. The albumen percentage and specific gravity were low.

Carter¹¹ reports upon forty-three cases, divided as follows:

Series (a)—Proved tuberculous by animal inoculation or autopsy findings, ten cases.

Series (b)—Probably tuberculous, twenty cases, ten of which showed tubercle bacilli in the sputum, lung signs, night sweats, or positive tuberculin reaction.

Series (c)—Following lobar pneumonia, six cases.

Series (d)—Transudates, five cases.

Series (e)—Eosinophilic pleurisies, two cases; both followed a pistol shot wound of chest.

His findings agree with those already given and may be summarized as follows: Proven and probably tuberculous cases, average lymphocytes ninety-six and five-tenths per cent., specific gravity 1.018; albumen, large amount; postpneumonic, average polynuclears seventy-one and seven-tenths per cent, specific gravity 1.016, albumen, large amount; transudates, average lymphocytes ninety-five per cent. specific gravity 1.008; albumen, none or small amount.

Carter apparently found a considerable number of endothelial cells in the tuberculous cases, but gives no percentages. He notes the increased polynuclear percentage in early cases of tuberculous effusions.

Miller¹⁰ reports upon the general characteristics, including cytodiagnosis, of seventy-five fluids from various cavities of the body, and in various pathological conditions. Many of his cases are transudates. Although the conclusions which he draws are somewhat at variance with those quoted above, his figures are in full accord with those of the other writers mentioned.

Lewkowicz³, in an admirable review, sums up the findings and conclusions of most workers in this field, and gives an admirable bibliography.

In proportion to the amount of work done upon cytodiagnosis of pleural fluids the method has been but little employed in the determination of the nature of collections of fluids in other serous cavities, such as the pericardium and peritoneum.

Rendu, and Weill and Descos have reported cases of sero-fibrinous pericardial effusion due to tuberculosis which showed the lymphocytic formula. Barjon and Cade have reported a case of pericardial effusion complicating chronic nephritis which showed abundant lymphocytes, a medium number of polynuclears, and endothelial cells in abundance. These writers have also reported a case of tuberculous serositis involving the pericardium and both pleurae; the fluid in the latter showed six per cent. only of polynuclears (the remaining cells were presumably lymphocytes), while the pericardial fluid showed ninety-seven per cent. of polynuclears. No cause for this variance was discovered. The conclusions of Steinbach have already

been mentioned. Patella¹⁹ has reported two cases of pneumococcic pericarditis with a lymphocytic formula.

The diagnosis of peritoneal effusions usually offers less difficulty than that of pleural fluids; consequently there is less cause for resource to cytodiagnosis. The results thus far obtained agree in general with those found in pleural fluids, but the lines are less sharply drawn. Tuffier and Milian, Dopter and Tanton, Archard and Loeper, Ketley and von Torday, Torchetti and others have reported cases of tuberculous peritonitis with a predominance of lymphocytes. The latter writer noted a predominance of polynuclears in the early stages, a finding agreeing with that in early tuberculous pleurisies. In peritoneal effusion due to cirrhosis of the liver, the findings vary. Ketley and von Torday, Songues, and Archard and Laubry report lymphocytes and endothelial cells to abound, while Dopter and Tanton state that polynuclear cells predominate.

Miller has studied thirty-seven peritoneal effusions, divided as follows: Tuberculosis, twelve, to which may be added another probably tuberculous, occurring as part of a general serositis; acute, non-tuberculous, one; occurring with cirrhosis of the liver, or due to general venous stasis, twenty; carcinomatous, three; in nine of the tuberculous cases ninety per cent. or more of the leucocytes were lymphocytes, the average was 88.75 per cent. Polynuclears were found in only five cases; in two over twenty per cent., and averaged twenty-five and eight-tenths per cent.; in one case they reached seventy-one per cent. Epithelial cells were absent in six, abundant in four. The case of acute peritonitis showed ninety per cent. of polynuclears and no epithelium. The peritoneal transudates gave an average of eighty-nine and seventy-two hundredths per cent. of lymphocytes, eleven and eight-tenths per cent. of polynuclears. Endothelial cells were absent in seven, abundant in ten, in plaques in eight. The specific gravity averaged 1.012, was never above 1.015, as opposed to an average in the peritoneal exudates of about 1.018, and never below 1.015. The carcinomatous cases had an average specific gravity of 1.020. Lymphocytes were exclusively present in two cases; in the other case there were seventy-five per cent. of polynuclears. Endothelial cells in abundant sheets were present in all these cases.

The cellular content of effusions into joint cavities apparently

depends more upon the acuteness of the lesion than upon the nature of the agent of infection, the more acute the lesion the greater is the percentage of polynuclears present. Thus acute septic arthritis and that due to the gonococcus is usually characterized by a polynuclear formula, while tuberculous arthritis and cases of neuro-arthropathy (both essentially chronic), show usually a lymphocytic formula.

In this review, for several reasons, I have not dealt with the relation of the cellular content of the cerebro-spinal fluid to the diagnosis of intra-cranial and intra-spinal lesions. This aspect of the subject I intend to take up later in another review.

REFERENCES

For an excellent bibliography of the work upon cytodiagnosis done before January, 1902, the reader is referred to an extended review upon the subject by Descos, *Revue de Médecine* October, 1902. The papers of Miller, Bunting, Carter, Lewkowicz and others give good bibliographies.

The papers here given are merely the ones especially reviewed or those to which it seemed particularly advisable to refer.

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2. LEWKOWICZ *Wien. Klin. Woch.*, Bd. xvii, s. 979, September, 1904.
3. MUSGRAVE *Boston Med. and Surg. Jour.* Vol. cli, No. 12-15, Sept. and Oct., 1904.
4. BUNTING *Johns Hopkins Hosp. Bull.*, Vol. xiv, p. 185, July, 1903.
5. RUNEBERG *Berl. Klin. Woch.*, 1897, No. 33.
6. REUSS *Deut. Archiv. f. Klin. Med.*, Bd. xxiv and xxviii.
7. HOFFMAN Cited by CARTER.
8. BARJON AND CADE *Archiv de Med.*, 1902, p. 160; *Lyon Medicale*, 1901 No. 32.
9. RAVAUT *Theses de Paris*, 1901.
10. MILLER *Amer. Med.*, Vol. viii, p. 835, Nov., 1904.
11. CARTER *Med. News*, Vol. 85, p. 620, October, 1904.
12. VARGAS-SUAREZ *Beitrag. zur Klin. d. Tuberculose*, 1903.
13. STASSEWICZ *Ref. in Folia Haematologica*, Vol. i, p. 102.
14. KETLEY AND VON TORDAY *Deut. Archiv. f. Klin. Med.*, Bd. lxxvii, s. 168, 1903.
15. JACOBSON *Ref. in Fol. Haematolog.*, Mol. i, p. 99.
16. STEINBACH *Inaug. Diss.*, Bukarest, 1903.
17. BARJON AND MAZUEL *Arch. Gen. d. Med.*, No. 40, 1903.
18. NAUNYN *Deut. Med. Woch.*, Bd. xxix, p. 140, April, 1903.
19. PATELLA *Deut. Med. Woch.*, 1902.

CHARLES K. WINNE, JR.

December 3, 1904.

WORK OF HEALTH PHYSICIANS

	1902	1903	1904	1905
Cases assigned.....	90	85	94	95
Calls made.....	390	367	416	418

INSPECTIONS

In the Bureau of Plumbing, Drainage and Ventilation, there were 125 inspections made, of which 45 were of old buildings and 80 of new buildings. Twenty iron drains laid were inspected, 5 connections with street sewers, 6 tile drains, 16 cesspools, 63 wash basins, 50 sinks, 56 bath[tubs, 34 wash trays, 4 butler's pantry sinks, 72 tank closets, and 52 permits were issued, 49 for plumbing purposes and 3 for building purposes. Four plans were submitted of new buildings, 3 houses were tested on complaint with peppermint test, 8 water tests were made. Forty-two houses were examined on complaint and 35 reinspections were made, and 39 complaints were found valid and 3 were found to have been made without cause.

In the Bureau of Nuisances there were 33 complaints made, of which 2 were made of privies, 6 of closets, 1 of drains, 3 of plumbing, 4 of water, 1 of filthy yards, 1 of filthy cellars, 1 of filthy premises, 8 of gas, 1 of chickens, 1 of dead animals, 1 of stagnant water and 2 unclassified. There were 34 inspections made and 18 reinspections, and 17 notices were served.

Forty-six inspections were made of mercantile establishments and 8 mercantile certificates were issued to children between 14 and 16 years of age.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported

	1901	1902	1903	1904	1905
Typhoid Fever.....	7	3	10	5	4
Scarlet Fever.....	4	9	10	12	6
Diphtheria and Croup.....	75	27	14	16	4
Chickenpox.....	0	6	49	5	8
Measles.....	3	8	3	7	66
Whooping-cough.....	15	0	3	3	0
Consumption.....	0	0	0	0	0
Totals.....	104	53	92	43	88

Number of days quarantine for diphtheria:

Longest.....37 Shortest.....4 Average.....18

Number of days quarantine for scarlet fever:

Longest.....57 Shortest.....26 Average.....36

Fumigations:

Houses.....11 Rooms.....18

ANTITOXIN

Cases of diphtheria in which antitoxin was used.....	4
Cases of diphtheria in which antitoxin was not used.....	0
Deaths from diphtheria after use of antitoxin.....	1

The one death from diphtheria was a female, seven years old, sick four days, antitoxin used on the fourth day and two or three hours before death. Cause of death probably suffocation from croup.

BENDER LABORATORY REPORT

	1902	1903	1904	1905
Initial positive.....	20	13	17	2
Initial negative.....	61	77	65	9
Release positive.....	15	9	7	0
Release negative.....	25	8	9	3
Tubes spoiled.....	6	....	....	....
Totals.....	127	107	98	14

Cultures for Tuberculosis.

Initial positive.....	3	0
Initial negative.....	1	5

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A regular meeting of the Medical Society of the County of Albany was held in Alumni Hall, Wednesday evening, February 8, 1905. The meeting was called to order by the President at 8:45 P. M.

There were present Drs. Bedell, Boyd, Branan, Cook, Gutmann, Hacker, Hinman, Lempe, Lipes, Lochner, MacFarlane, McKenna, Moore, C. H., Rooney, Shaw, Theisen, Traver, VanderVeer, J. N.

Dr. HINMAN moved that the minutes of the previous meeting be accepted as printed in the ANNALS. Seconded. Carried.

Dr. ROONEY moved that the Society notify the Representatives of Albany County in the Legislature of its opposition to the so-called "Osteopathy" and "Kinesitherapy" bills. Seconded by Dr. WARD. In the discussion Dr. SHAW said that the legislative committee of the State Society were just about to combine against the Osteopathic and Optometric bills. The Kinesitherapy bill was considered by some of the legislators themselves in the light of a joke. He suggested that each member of the Society write a personal letter to the representative of his district in the Legislature expressing his opposition to these various measures.

Dr. THEISEN then read his paper which will be published in the ANNALS.

Dr. SHAW, in the discussion, said that the part of Dr. Theisen's paper which chiefly appealed to him was that treating of adenoids. It was at first thought that climate was a predisposing factor, especially the hot and humid. This idea has been given up as the disease is practically world-wide. The children who suffer from adenoids are often of the so-called lymphatic type. City children seem to be more often the sufferers than those living in the country. The bacteriological examination of adenoid tissue has shown that the tubercle bacillus is present in about five per cent. of cases. The most prominent symptoms are usually those of mechanical impediment to respiration, although adenoids may cause

many seemingly irrelevant symptoms when there are no obstructive signs. One distressing sign with some of these children is that while they appear healthy they will not eat. Frequently there seems no apparent cause for their loss of appetite but if adenoids are searched for they are usually found and after removal the appetite promptly returns. The frequency of ear disease in children is shown by the fact that out of sixty-six infants in St. Margaret's Home, eleven have discharging ears. A very important train of symptoms are those we call reflex. One of these is enuresis nocturna, which is supposed to be caused by the carbon dioxide intoxication arising during sleep in these cases of adenoids. Asthma is another and one observer has reported that 20 per cent. of cases occurring in children are caused by adenoids. Spasmodic croup occurs very often in these children, and many of them have an unexplainable cough. The effect on the general constitution is the loss of power and resistance that comes from chronic carbon dioxide intoxication. They are sallow, anemic, youngsters who take cold easily, are subject to night terrors, are in fact pure house plants. The treatment is very unsatisfactory unless operation be done, when the results are often brilliant.

Dr. HINMAN moved that the privilege of the floor be extended to other than members of the Society. The President declared that if there were no objections it would be so ordered.

Dr. BLAIR spoke concerning the treatment of hay fever. He related the case of a boy who suffered so that he was unable to sleep or lie down. He found that the child suffered from hyperplasia of the entire tonsillar system. Excision of the tonsils and adenoids gave complete relief. At the same time he had suppurative ear disease which was also cured. He laid stress on the necessity for careful toilet of the mouth, nose and accessory cavities in cases of scarlet fever, measles and diphtheria which would prevent many cases of secondary ear disease. The necrosis of the structures of the middle ear occurring in diphtheria is very rapid but may be painless.

Dr. COOK wished to say that he was opposed to the removal of the tonsils because of the bad results in the few cases which have been under his observation.

Dr. WARD said that he did not wish to let the evening go by without expressing his thanks for the very complete and satisfactory paper of Dr. Theisen. He was very much surprised to hear of the proportion of cases of suppurative ear disease occurring in influenza. He said that he could not recollect having seen any cases of suppurative disease although he had seen many ear aches. Perhaps in the lower classes there might be a larger incidence. He felt that the suggestions made by Dr. Blair were very valuable. He said that his experience with operated cases of hay fever had been very unsatisfactory. He recalled five cases which had been reported cured but in whom the disease returned in a year or two. The only method of treatment that has been satisfactory with him was the climatic. He remembered three cases who suffered from an attack while living on Fire Island if there was a land breeze for twenty-four hours, whereas when the breeze was from the ocean they were entirely well.

Dr. THEISEN said that he entirely agreed with Dr. Ward concerning hay fever but disagreed with him entirely on the frequency of influenzal suppurative ear disease. In the last two weeks he had seen six cases of suppurative disease occurring in typical cases of grip. One of these had an associated mastoiditis of very rapid development which seemed at first to demand operation but a free tympanic incision entirely relieved the condition. The statistics of Dr. Dench also show that influenza is one of the most common causes of suppurative disease of the middle ear. In some cases of hay fever Dunbar's Pollantin does some good, but treatment should be begun at least one month before the expected onset of the attack.

Dr. WARD interposed, asking whether Dr. Theisen's cases of ear disease occurring in grip had been unnecessarily exposed or otherwise not well cared for. ☐

Dr. THEISEN replied that many of the cases he had operated on had been attended by trained nurses and had occurred in the better classes.

Dr. LOCHNER read his paper, which will appear in the ANNALS.

Dr. COOK said that he remembered very well a case which occurred in his early years in practice and in which the result was most happy. The patient had many convulsions and was unconscious for three or four days. The child was born alive but lived only 24 or 48 hours. He thought that the treatment had been by injections of pilocarpine but that the bromides and chloral had also been used. He uses salt solution infusions also to wash the urates out of the blood. He could not call to mind having ever had a death from eclampsia.

Dr. WARD simply wanted to say that one should never despair of one of these cases. He instanced one patient who had eighty convulsions in three or four days and who recovered completely. He insisted upon the necessity and usefulness of bleeding these cases. He had never had reason to regret his use of this measure. He related the history of a most interesting case. This woman had a very severe eclamptic attack with her first child. After a lapse of eighteen months she became pregnant again and her condition became so alarming that an abortion was done. She was warned of the danger of future pregnancies and wisely refrained for two years when she became seized with the religious idea that it was her duty to have another child. She promptly became pregnant again and went on quite well until near the sixth month when her condition became rapidly worse and an artificial labor was induced, the child delivered alive and is alive today. She unfortunately after a little time contracted scarlet fever from her boy, and the kidney condition became much worse and ultimately caused her death.

Dr. LIPES said that bleeding was one of the very best measures for use in this condition but should be followed in all cases by the infusion of normal salt solution. In five hundred cases dying from eclampsia it was found that ninety per cent. showed some kidney lesion, eighty-five some liver changes and next in frequency some lesion of the brain was found. Albuminuria was common in pregnancy and the secretion of urea was normally diminished so that the mere presence of albumin with diminished urea was so common that much importance could not be laid upon

it. Altogether he wished to congratulate Dr. Lochner for the excellence of his paper which so completely covered the subject that there was little to add.

Dr. LOCHNER said that he had mentioned the possibility of bleeding in his paper only because he had been able to carry his cases along without resorting to this measure, several times however very near it. Moreover in eighteen years' experience he has never seen a case of eclampsia bled.

The President said that his father had two favorite measures for treatment of eclampsia, namely, bleeding and the administration of veratrum viride. His father had often dwelt on the necessity for keeping the pulse below sixty at the same time keeping the patient prone in bed.

Dr. MACFARLANE said that Caesarean section had a distinct field in this sort of case and related some of the results obtained on the Continent by the use of this method.

On motion, the Society adjourned.

JAMES F. ROONEY, *Secretary.*

JAMES P. BOYD, *President.*

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—STATISTICS FOR FEBRUARY, 1905.—Number of new cases, 80. *Classified as follows:* Dispensary patients receiving home care, 1; district cases reported by health physicians, 13; charity cases reported by other physicians, 36; patients of limited means, 30; old cases still under treatment, 48; total number of patients under nursing care, 128. *Classification of diseases (new cases):* Medical, 30; surgical, 6; gynæcological, 5; obstetrical, 16 mothers and 16 infants under professional care; one contagious disease in medical list; removed to hospitals, 2; deaths, 3.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; attending obstetricians, 1; medical students in attendance, 4; Guild nurses, 5; patients, 4; visits of head obstetrician, 1; by attending obstetricians, 12; by medical students, 14; by Guild nurses, 24; total number of visits in this department for month, 51. *Visits of Guild nurses (all departments):* Number of visits with nursing treatment, 887; for professional supervision of convalescents, 199; total for the month, 1,086. Six graduate nurses and four assistant nurses were on duty. Cases were reported to the Guild by five of the health physicians, and by twenty-seven other physicians.

KINGS COUNTY HOSPITAL.—The rapid increase of the patient population of the Kings County Hospital has so crowded the wards that it has become necessary to largely increase the nursing staff, and the Training School is prepared to receive forty additional pupil nurses. The course of the school is that which has been approved by the State Board of Regents, and the diploma of this school will entitle the holder to receive the certificate of Registered Nurse from the State Board of Regents

without examination. Graduates of this school desiring to enter the Civil Service of the City of New York in lines of service pertaining to their profession are entitled to do so without competitive examination. Applicants for admission to the Training School may apply to Miss M. O'Neil, Superintendent of the Training School, Kings County Hospital, Clarkson Street, Brooklyn, N. Y.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission announces general examinations to be held April 8, 1905, including the following positions, for which application must be made on or before April 3: Assistant, office of Miscellaneous Court Reporter; Assistant in Clinical Laboratory, Pathological Institute; Pupil Nurse, Erie County Hospital; Male officer, State Charitable Institutions, Physician, Fourth and Sixth Grade, State Hospitals and Institutions, Regular and Homœopathic Schools; Woman Physician, Homœopathic School. Also an examination to be held in May for Head Teacher (male) at the State School for the Blind, and general examinations for Stenographers in State and County service to be held in various cities from May 8 to June 17. Full particulars of the examinations and blank applications may be obtained by addressing the Chief Examiner of the Commission at Albany.

NEW YORK'S DISPENSARY SYSTEM.—The following statement is abstracted from advance sheets from the Annual Report of the Committees on Dispensaries of the State Board of Charities: "On October 1, 1903, there were 123 licensed dispensaries in the State. Four dispensaries have ceased work since that date and no new licenses have been issued during the year. Since October 1, 1904, licenses have been issued to the Italian Benevolent Society to conduct a dispensary at 169 West Houston Street, Borough of Manhattan, New York City (license granted October 12, 1904), and to the Bedford Guild, 962 Bergen Street, Borough of Brooklyn, New York City (license granted Decemehr 21, 1904). Of the 123 dispensaries which were open during a whole or part of the year ending September 30, 1904, 20 were in receipt of public money directly (\$11,132.40 all told); 61 were connected with other charities in receipt of public appropriations, and 42 were supported wholly by private contributions. The total property, real and personal, of the 81 dispensaries in receipt of public funds and reporting annually to this Board was \$1,175,436.56 October 1, 1904; their total indebtedness on the same date was \$68,996.40; their total receipts for the year ending September 30, 1904, \$125,113.16, and their total expenditures \$105,642.69. The work of these dispensaries is of more than casual interest and importance in view of the fact that such work is more extensively carried on in this state than in any other part of the country; that here it is more highly organized and developed, and that here, as in no other state, dispensaries are licensed and regulated by the State Board of Charities. The system has now been in operation for a little more than five years, and certain features and results of its workings are set forth herewith. During the year the Inspector of Dispensaries has made a special investigation as to the extent of compliance with the rules of the Board adopted pursuant

to chapter 368 of the Laws of 1899, affecting the management of all licensed dispensaries. Four out of the 123 licensed dispensaries in operation at the beginning of the year have been closed, and the following table shows the extent of compliance with the various provisions of the rules on the part of the 119 dispensaries remaining:

RULES		Yes	No.	In Part	Not Applicable	
I.—Public Notice Posted.....	117	2	.....	.....	.....	
II.—1. Registrar.....	118	2	1	.....	.....	
2. Deputy (not required).....	44	75	.....	.....	.....	
3. Makes and preserves records.....	114	3	2	.....	.....	
4. Receives applicants.....	117	1	1	.....	.....	
5. Sees that rules are enforced.....	18	2	99	.....	.....	
III.—1. Examines all applicants.....	116	3	.....	.....	.....	
Superficially 34						
Fairly well 31						
Thoroughly 54						
Are any refused admission?.....	87	32	.....	.....	.....	
a. Emergency cases admitted....	119	.....	.....	.....	.....	
b. Poor applicants admitted.....	119	.....	.....	.....	.....	
c. Doubtful cases admitted upon signing representation card..	90	28	.....	1	.....	
d. Subsequent investigation made	41	76	.....	2	.....	
e. Results of investigation filed...	32	85	.....	2	.....	
f. Non-signers refused admission.	100	18	.....	1	.....	
2. Representation cards in proper form.	113	6	.....	.....	.....	
3. a. Pass cards issued.....	119	.....	.....	.....	.....	
b. Penalty printed thereon.....	110	4	5	.....	.....	
IV.—1. Matron.....	117	2	.....	.....	.....	
2. Cleanliness and order preserved....	115	4	.....	.....	.....	
3. Present at gynecological examinations, etc.....	89	3	.....	.....	27*	
V.—1. Contagious diseases excluded.....	119	.....	.....	.....	.....	
2. Registrar prevents exposure.....	119	.....	.....	.....	.....	
3. Registrar reports to health authorities.....	118	1	.....	.....	.....	
VI.—1. Clinical or other instruction given..	28	91	.....	.....	.....	Instruction permitted by rules.
2. Treatment conditional thereon.....	.....	28	.....	91	.....	
3. Consent of patients obtained.....	27	1	.....	91	.....	
VII.—1. Apothecary (not required).....	107	12	.....	.....	.....	
2. Licensed or medical graduate.....	104	3	.....	.....	12†	
3. Appointed under Civil Service Rules.	8	.....	.....	.....	111‡	
VIII.—1. Board of Health ordinances observed	119	.....	.....	.....	.....	
2. Minute made before September 30..	45	74	.....	.....	.....	
IX.—1. Seats for all applicants provided....	107	12	.....	.....	.....	
2. Sexes separate in (a) waiting rooms..	85	32	2	.....	.....	
b. treatment rooms.....	102	17	.....	.....	.....	
3. Suitable equipment and supplies....	109	8	2	.....	.....	

*Such examinations are not held in these dispensaries.

†No prescriptions compounded in these dispensaries.

‡Applies only to 8 dispensaries connected with municipal hospitals in New York City.

It will be seen from the above that with 24 of the 31 requirements of the dispensary rules compliance is practically complete; that in four of these provisions compliance is fairly good, and that in three matters, those requiring an investigation to be made as to the ability of doubtful applicants to pay for their treatment, the filing of results of these investigations and of making a minute showing observance of the ordinances and orders of the Board of Health, compliance is somewhat lax. Some of the showings of this table are very satisfactory. 114 out of 119 dispensaries examined are keeping reasonably complete records of their work. In 54 cases the examination by the Registrar of applicants for treatment is reported as being done thoroughly, and in 31 additional cases as being done fairly well. In only 34 cases is the work reported as being done superficially. As this is perhaps the crucial point in the proper

administration of dispensaries viewed from the social standpoint, this showing is encouraging, though by no means all that could be desired. In 87 dispensaries obviously well-to-do applicants are refused admission by the Registrar after questioning but without further formality while in 100 dispensaries where the Registrar is still in doubt as to the applicant's ability to pay, persons unwilling to sign representation cards are refused treatment. In 90 out of 119 dispensaries doubtful cases are admitted only upon signing representation cards. This would seem to indicate that the doors of the dispensaries in the State are reasonably well guarded in the large majority of cases, that they are particularly protected in most of the remaining instances, and that they are not wholly unguarded except in a very small number of cases. In all but two of the dispensaries a matron is employed; cleanliness and order are maintained in all but four, and in only three cases the matron is not present at gynaecological examinations where such are held. In only three dispensaries is the apothecary unlicensed or not a medical graduate, and in every dispensary compliance with the local ordinances of the Board of Health is reported as complete. All but 10 of the dispensaries are reported as having suitable equipment and supplies, and in practically all of them seats are provided for every applicant, and in the great majority of them the sexes are separated both in the waiting and in the treatment rooms. It is interesting to note that the facilities of but 28 dispensaries are used for the purpose of giving medical instruction, and in none of these is the treatment given the patient conditional upon his willingness to submit to an examination before a class. Another item of interest is the fact that but 12 dispensaries are without an apothecary as a regular officer or employe of the dispensary, and that in only three cases such apothecary is not a licensed pharmacist or a medical graduate.

SPECIAL TRAINS FOR THE PHYSICIANS EN ROUTE TO PORTLAND, ORE.—Arrangements have been completed under which the Northern Pacific Railway will run three solid special trains through to the Pacific coast for the physicians who will go west in July to attend the coming sessions of the American Medical Association, the national organization of doctors. The first special will run through from Chicago, leaving June 30 and reaching St. Paul July 1, proceeding west and stopping at Gardiner, Mont., for a five and one-half day tour of the Yellowstone National Park. A second solid special train will leave Chicago July 1, reaching St. Paul July 2, and proceeding west to Gardiner for a similar tour of the Yellowstone. A third special train will leave Chicago July 6, running through to Portland with stops at several important points. The Northern Pacific has been designated the official route for the handling of the physicians and the national officers will go west on one of the first two specials, in both of which accommodations are very nearly exhausted. Arrangements are now being made by numerous small parties for space in the third special, and it is possible that additional trains will be arranged for if the demand for reservations continues heavy. Each special will be made up of standard Pullman equipment, with through dining cars and ample baggage accommodations. Every facility which adds to luxurious

comfort en route is being arranged for and the train schedules have been worked out with special reference to the convenience of the doctors. The third special will arrive in Portland the morning before the convention opens.

ADVANCED METHOD OF REMOVING GERMS AND DUST FROM RAILWAY CARS.—The management of the Central Railroad of New Jersey has made another step of advancement through the recent installation of a system of car cleaning which has the universal approval of the health authorities along its line, and as it is practically the first transportation company to adopt it, the method may be of interest to our readers. The old method of car cleaning with a whisk here and a dash there with a broom or duster, was not only unsanitary, but unsatisfactory, for the reason that it had the effect largely of removing dust and dirt from one section and depositing it elsewhere; but under the new method, which is termed the "Vacuum Sweeping System," the dirt and dust is drawn from the car by suction through a pipe, and is gone forever. The New Jersey Central has erected an immense vacuum plant in its Jersey City yards, and for a distance of 3600 feet has laid pipe varying from two to five inches in diameter, covering in all about three miles. At short intervals this pipe is tapped, and from these cocks is run the flexible hose, which may be taken in the car either by door or window. At the foot of the hose is a metal pipe with a flat triangular end, along the base of which is an opening, and through which the dust and dirt is drawn by the Vacuum or "drawing-in-machine" located a distance away. The operator runs the slot opening over the cushions, carpets, curtains, wood-work, etc., and without any commotion or dust raising, every loose particle or germ is whisked away, everything being left clean and wholesome. The dust thus removed, before reaching the great "drawing-in-machine" must pass through two dust separators, the first of which clears the air of 90 per cent. of the grit, dust and germs; the second separator or cylinder draws the air through water in which corrosive sublimate is used, and completes perfectly the purification. The New Jersey Central management has for a long time felt the necessity for a more sanitary method of car cleaning, and the Vacuum System, while reducing disease liabilities to a minimum, at the same time reduces the cost of cleaning and time consumed. Two cars can be thoroughly cleaned under the new system at the same expense of time and money as was formerly consumed in cleaning one, and this in connection with the increased sanitary value, is sure to cause its general introduction within a short time, not only by other transportation companies, but by theatres, hotels, places of public resort and even the home.

DEATHS.—DR. ISAAC C. EDSON (A. M. C., 1867), died at Windsor, N. Y., February 22, 1905.

—DR. PATRICK THOMAS MARKEY (A. M. C., 1893), died at Schenectady, N. Y., February 22, 1905.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Essentials of Anatomy; including the Anatomy of the Viscera. By CHARLES B. NANCREDE, M. D., Professor of Surgery and Clinical Surgery in the University of Michigan, Ann Arbor. Seventh edition, thoroughly revised. 12 mo. volume of 419 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1904. Cloth, \$1.00 net.

This work, now in its seventh edition, has met with a most cordial reception. In this revision the entire book has been carefully gone over and the section on the Nervous System completely rewritten. The illustrations throughout the text are excellent, showing the anatomy of various parts with unusual clearness. Students, and indeed young practitioners, will find the work of great service.

Anatomy, one of the fundamentals upon which rests the whole science of medicine, should be properly understood by every student of medicine. The science of anatomy ought to be especially cultivated by the young student, for its study will lead to vast truths from which he will receive an important part of his knowledge appertaining to medicine in general. Furthermore, it teaches the student to observe accurately, to think properly, to discipline and concentrate his mental energies and in so doing it tends effectually to brighten and refine the mind. Short-cuts to a knowledge of anatomy give rise to lazy methods of study and the knowledge so acquired is soon forgotten, as it has not been properly stored in the mind. For these reasons, quiz compends are not to be recommended to students. To the busy practitioner, who wishes concise information, a compend is perhaps of service.

Dr. Nancrede has embodied in his little book the most essential facts of anatomy and in this seventh edition the work is made to conform to the very latest text-books. While the work is not intended to be comprehensive, the entire field of anatomy is concisely gone over. Some changes have been made in the part relating to the nervous system, whereby the subject of nervous anatomy is brought pretty well up to date. The answers are not as condensed as in some compends, their accuracy being a marked feature.

H. L.

Practical Dietetics, with Reference to Diet in Disease. By ALIDA FRANCES PATTEE, graduate, Boston Normal School of Household Arts, instructor in Dietetics, Bellevue Training School for Nurses; Bellevue Hospital, New York City. Second edition. Revised and enlarged. Published by the author, 52 West Thirty-ninth Street, New York City.

The publication of this book has followed the work of its author as instructor in dietetics at various hospitals. After preliminary remarks on the general uses and administration of food, the preparation of liquids,

semi-liquids and solids is described, and full sections are given on diet in disease and in infancy. Recipes and formulas are included. The compilation appears to have been intelligently and carefully done, and the book can be recommended.

A Text-book of Physiology. By ALBERT P. BRUBAKER. 699 pages, 354 Illustrations, 3 plates. P. Blakiston's Sons & Co., Philadelphia, 1904.

In this text-book the known facts pertaining to physiology are presented to the reader in a clear and concise manner. Particular pains has been taken to emphasize the facts which have a more or less direct bearing upon the symptomatology, pathology and treatment of the diseases affecting the several physiological systems. In dealing with those phenomena which admit of explanation by more than one hypothesis, the author has confined himself to a description of the phenomena observed and a statement of the hypotheses which have been advanced; the text-book being in this respect particularly accurate and clear, while the reader is not burdened by arguments advanced to support the author's personal opinions regarding the relative merits of the different hypotheses. Few of the illustrations are original, but they have been carefully selected from standard works and full credit given to the original authors.

As a text-book for the medical student or practitioner, who desires a clear and comprehensive description of the essential known facts of physiology, this work is a decided improvement over many of the former text-books on the subject.

E. M. S.

The Ophthalmic Year-Book. A Digest of the Literature of Ophthalmology with Index of Publications for the Year 1903. By EDWARD JACKSON, A. M., M. D.

A book of this kind, if it be carefully prepared by a competent author, is among the most valuable that the busy practitioner can possess. The author of the one now under consideration is among the very ablest ophthalmologists. His literary work, like his professional, has been, without exception of which the present reviewer knows, of a high order of excellence. In this book, the author has somewhat departed from the usual order, in annuals, by making the indices very comprehensive. This is a merit that is worthy of notice since, on this account, the person using the book is thereby helped to extend his study, in almost any desirable direction, with the least consequent effort.

An instance of the author's spirit, to serve the reader most effectively, occurs at the conclusion of the first paragraph on page 145, at the end of the discussion of the extraction of the cataractous lens through the sclera: "It is an operation that I would not mention on its own account; but often a method which one would not use may prove suggestive when a problem is to be dealt with that requires for its solution some departure from ordinary methods."

One who would keep apace with the progress of ophthalmic science would do well to study this book.

SURGERY

Edited by Albert Vander Veer, M. D., and Arthur W. Elting, M. D.

Gall-stones and their Treatment.

In the *Berliner klinische Wochenschrift* for August, 1904, appeared a transcript of a lecture delivered by Professor König, of the Königliche Friedrich-Wilhelms University, of Berlin, on the subject of gall-stones and their surgical treatment, from which lecture this abstract is made.

Professor König discusses only that part of the subject relating to concretions in the gall-bladder and cites several cases under the following divisions:

1. Cholecystotomy, with the formation of a gall-bladder fistula which is closed later by natural or operative methods. This is the principal method of operation advocated.

2. Ideal Cholecystotomy, in which the gall-bladder is opened, the concretions removed, and the incisions immediately closed, a method which does not receive as great commendation as in number 1.

3. Cholecystectomy, advocated where the gall-bladder presents itself with a distinct pedicle, and no great amount of adhesions.

The two incisions utilized to expose the organ are: Beginning at the mamillary line, in the right hypochondrium, over the last rib, wherein the organ usually lies, downward on the border of the rectus, approaching below the middle line of the body, and ending according to conditions at a greater or less distance below the umbilicus.

When necessary to reach the portal vein, common duct, duodenum, stomach, pancreas, etc., the second one begins just below the ensiform cartilage and passes straight downward, curving around the umbilicus and ending in the first incision.

The writer then discusses the diagnosis in the plainer and also more obscure cases, citing seven cases, with eight operations and no deaths, including one case of perforation with general peritonitis.

Following this comes a description of the methods of operating, advocating, in the main, the opening of the organ, removal of the concretions, and drainage, based on the author's experience of the uncertainty of determining exactly as to whether all of the stones have been removed or not.

In this operation of fixation and drainage, the writer discusses the atrophied and the deep-seated organ and its relation to a thick or thin abdominal wall, also the nature of the retaining sutures and whether or not they should pass entirely through the abdominal wall. That case which has a thin abdominal wall, and a distended gall-bladder, is considered ideal for the through-and-through suture.

After the organ is sewn in place into the skin incision, the patient is placed partly on the right side and with the edges of the wound protected the organ is opened, and the contents allowed to escape.

In general the following rules of protection are laid down:

1. To protect the suturing of the organ in the territory of the incision, before opening, by means of the through-and-through suture.

2. The suturing of the organ with the muscular or peritoneal abdominal wall, excepting thereby the skin; also here prolonging, if possible, the opening of the organ for a few days. This is especially adaptable to thick abdominal walls.

3. Total delivery of the organ through the incision and then opening, followed by suture of the organ around the incision with the skin. In this way the two surfaces of mucous membrane of the organ eventually unite.

4. The removal of the organ where a cholecystitis is persistent or the organ is so shrunken as to preclude further function. In this method drainage is advocated from the stump of the organ through the abdominal wound.

In the author's opinion and experience, perforations of this organ are not as severe in their symptoms and after results, as those of the stomach or intestines.

J. N. VANDER VEER.

Peritonitis Originating from the Biliary Passages. (Ueber die von Gallenwegen ausgehenden Peritonitiden.)

OSCAR ERHARDT. *Archiv für klinische Chirurgie*, LXXIV Band, Heft 3.

From a study of the published cases of biliary peritonitis and from a series of experimental investigations the writer has attempted to draw some definite conclusions as to the special features of this variety of peritonitis. He has conclusively demonstrated that sterile bile will not produce inflammatory conditions in the peritoneum. He has demonstrated that in these cases the bile is absorbed from the peritoneum and gives rise to cholæmia and bile poisoning if the intra-peritoneal fistula persists long enough.

Clinical observations of traumatic rupture of the gall-bladder have confirmed this observation. One is justified in assuming in cases in which after an escape of bile a peritonitis has developed that there is a secondary bacteriological agent responsible for the peritonitis. Normally the bile in all portions of the biliary passages except the lower part of the common duct is sterile. The colon bacillus which is found present in over sixty per cent. of the cases of cholelithiasis is the most important bacterium associated with biliary peritonitis. The staphylococci, the streptococci, and typhoid bacilli may also be present. It has been demonstrated that the typhoid bacillus may not only cause cholecystitis but also frequently causes ulceration of the gall-bladder and occasionally a perforative peritonitis originating from the gall-bladder. It has been demonstrated that the bile possesses only limited bactericidal properties. The toxicity of the bacteria, however, seems to be decidedly diminished by the bile.

The writer has performed a series of experiments in which he produced an intra-peritoneal fistula and inoculated the peritoneal cavity with virulent colon bacilli. Control animals were inoculated with practically the same dose of the same bacilli. The control animals all died within twenty-four hours from septic peritonitis. The animals in which a biliary fistula had been produced lived from three to five days. In this

last group of cases the peritonitis was not general in character, but presented extensive adhesions, fibrinous deposits and the formation of pus between the coils of intestine in the vicinity of the gall-bladder. There were comparatively little absorption of bile from the peritoneum in these cases and practically never any icterus. The same results followed the experiments performed with the staphylococci. These experiments the writer believes prove the antitoxic action of the bile and the tendency of biliary peritonitis to encapsulation.

Peritonitis, originating from the biliary passages, with the exception of the traumatic variety is usually due to perforation associated with cholelithiasis, ulceration in the course of typhoid, carcinoma of the gall-bladder, or necrosis of the gall-bladder. One characteristic of biliary peritonitis is the absence of the classical picture of a perforative peritonitis. In seventy cases of this character collected from the literature in only two could the writer find any relation to this classical picture. Usually the bland character of the peritonitis has been especially emphasized by the writer and often the whole course of the disease has been of such an indefinite character that a perforation of a hollow viscus was not suspected. The initial symptoms are occasionally quite severe, but these are usually due to shock.

In twenty carefully studied cases in only ten could the probable time of occurrence of the perforation be fixed from the history or symptomatology. In eight of these cases, perforation was indicated by severe pain during an attack of colic. The symptoms are usually those of a subacute peritonitis, the severity tending to increase from day to day. Vomiting is at first infrequent but gradually becomes more frequent. The pulse gradually rises as does the temperature. Tenderness and distention of the abdomen are usually only slight. Icterus has never been noted, while in traumatic rupture of the gall-bladder icterus is practically always present. A considerable number of cases of peritonitis arising from the biliary passages have ended in recovery either from encapsulation or fistula formation or after operative procedure.

The writer concludes that cases of peritonitis of biliary origin present a favorable prognosis after operative procedure for two reasons: (1) because of the antitoxic action of the bile and (2) because of the tendency of the bile to induce the formation of adhesions. That this form of peritonitis does run a favorable course is shown by the fact that of fifteen cases of peritonitis, resulting from perforation of the gall-bladder, eleven recovered after operation.

Inflammations of the Joints in Infancy and their Relationship to Later Deformities. (Ueber Gelenkentzündungen im Säuglingsalter und ihre ätiologischen Beziehungen zu späteren Deformitäten.)

GUSTAVE DREHMANN. *Zeitschrift für orthopädische Chirurgie*, XIII Band, 2 u. 3 Heft.

In early infancy there occasionally occurs an inflammation of certain joints which is associated with swelling and contracture. The symptoms usually last several weeks, occasionally there is a spontaneous discharge

of a muco-purulent material; in the majority of cases, however, the symptoms, after lasting for some time, gradually abate and the joint is usually restored to its normal condition. The hip-joint and the knee-joint are most often affected, the hand and elbow occasionally.

The etiology of the condition is obscure. Tuberculosis can usually be excluded and the condition does not resemble the syphilitic inflammation of joints. Certain authors have believed the majority of the cases to be due to the gonococcus usually associated with some other manifestation of gonorrheal infection. Some writers have assumed that the infection has its origin in a gonorrheal stomatitis or a gonorrheal inflammation of the upper air passages. In some instances trauma at the time of birth may cause a localization of the bacteria absorbed from the intestine. As a rule, the inflammation appears to begin in the epiphysis and to involve the joint secondarily. The writer has observed seven cases of this character, six of which involved the hip-joint and one the knee-joint. In three of these cases, which were seen some time after the disappearance of all symptoms of inflammation there was a dislocation of the hip, which from a clinical standpoint could not be differentiated from the ordinary congenital dislocation. In all of these cases there was a history of some inflammatory condition about the hip-joint, occurring shortly after birth and associated with a flexion at the hip-joint. After a longer or shorter period of time, the flexion gradually disappeared and then it was noticed that the leg was somewhat shortened. Examination at this time usually led to the diagnosis of congenital dislocation of the hip.

The writer has made careful X-ray studies of these cases, as a result of which he was able to demonstrate the evidence of inflammatory conditions about the joints, conditions quite different from those of a congenital dislocation of the hip. One of the chief characteristics of this class of cases is the fact that the dislocation of the hip is noticed during the early period of life, which is usually not true of congenital dislocation of the hip, the diagnosis of which is practically only made when the child begins to walk. The writer has also observed certain cases of coxavara which have resulted from similar joint inflammations, and he believes that this possible etiology should be investigated in all cases of coxavara.

The Indications for the Extirpation of the Spleen. (Die Indicationen zur Exstirpation der Milz.)

JORDAN. *Berliner klinische Wochenschrift*, No. 52, December, 1903.

The result of 400 extirpations of the spleen has shown that its loss is of comparatively little significance and that an operation of this kind is followed by practically no influence upon the general condition. The most frequent result is a transitory change in the constitution of the blood, which again becomes normal after the lapse of days, weeks, or sometimes months. The result of all this has been to broaden the indications for splenectomy. The writer's observations are based upon seven cases upon which he has performed this operation.

Rupture of the spleen he regards as the first absolute indication for

splenectomy. Suture of the spleen in these cases is decidedly unsatisfactory.

A rare indication for splenectomy is a traumatic prolapse of the spleen resulting from a wound of the abdomen.

Tumors of the spleen may be divided into the cystic and the solid. The cystic may be further sub-divided into non-parasitic and echinococcus. In the first variety, which usually develop slowly and cause simply local symptoms, the indications for splenectomy are only relative, drainage sometimes being all that is necessary. In the second variety, namely echinococcus cysts of the spleen, splenectomy is by far the operation of choice. There are in the literature eight cases of splenectomy for simple non-parasitic cysts, all of which recovered; and seventeen cases of splenectomy for echinococcus cysts, with only two deaths.

Primary solid tumors of the spleen are extremely rare. There are in the literature four cases of primary sarcoma and one of angioma, in all of which splenectomy was performed with recovery.

The chronic hyperplasias of the spleen may be divided into the leukemic, the pseudoleukemic, the malarial and the idiopathic. All attempts to extirpate the leukemic spleen have ended in death, so that in this group of cases operation is never to be thought of. The same is true of the pseudoleukemic. The operation is decidedly indicated in certain cases of malarial spleen and the results have been extremely satisfactory. It is also indicated in the simple chronic hyperplasias of the spleen, the etiology of which is obscure. This condition usually affects women, and is as a rule of slow progress. Enlargement of the spleen is the only symptom, the blood condition being normal. The removal is usually easily accomplished. In ten of these cases in the literature in which splenectomy was done there was no mortality.

In recent times, Banti's disease has afforded a positive indication for the extirpation of the spleen; seventeen of these operations having been performed, with fourteen recoveries.

In the treatment of the so-called wandering spleen, splenectomy is the operation of choice in all cases where the spleen is much enlarged, because the results of fixation of the spleen have been extremely unsatisfactory.

The final indication, and a rare one, for the extirpation of the spleen, is necrosis or suppuration of the organ following trauma. The results of this operation have been extremely satisfactory; seven cases of the kind being reported in the literature, all having recovered.

Investigations of the Influence of Operations upon the Course and Outcome of Diabetes Mellitus. (Untersuchungen und Erfahrungen über den Einfluss von Operationen auf den Verlauf und Ausgang des Diabetes mellitus.)

O. KÖRNER. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, Band 12, Heft 5.

Some authors have gone so far as to advise against all operations upon diabetics. This is unquestionably the proper position when the operation is performed for cosmetic effect. There are, however, many instances

in which it becomes necessary to operate upon individuals with diabetes, not only in order to save their lives, but also because of the favorable influence which the operation may exercise upon the course of the diabetes. This is especially true of acute suppurative inflammations, to which individuals with diabetes are especially prone. In many instances it is possible to prepare the patient for operation and to, in a measure, overcome the diabetes before the operation is performed. This is always desirable where it is possible. In some instances, however, the rapid cutting off of the carbohydrates has been known to result in coma. Naunyn has advised the administration of large doses of sodium bicarbonate, both before and after operation.

Various explanations have been offered for the coma which sometimes follows operations upon diabetics, some authors assuming it to be due to the anesthetic; others believing that the anesthetic exercises but little influence upon the development of coma. It is probable that fasting and depriving the patient of water prior to the operation in some instances predispose to coma; and furthermore the mental excitement attendant upon an operation is believed in some instances to have played an important rôle. It is always desirable to operate upon diabetics as early as possible in the morning, in order not to prolong the fast beyond the ordinary physiological limit.

It is very difficult to gain any idea from the literature as to the influence of operations upon the course of diabetes, because of the fact that the nature of the operation, as well as the character of the diabetes, is often not completely stated. The writer has attempted to investigate the results of one operation which is frequently performed upon diabetics and which usually presents more or less the same grade of severity, namely, that of acute mastoiditis. From the literature and his own experience he has collected thirty-eight cases of this character, five of which are excluded because death resulted from conditions in no way related to the diabetes. Of the remaining thirty-three cases, twenty-nine, or eighty-eight per cent. healed completely. In some cases the wound healed as rapidly as in normal individuals, namely, in from three to six weeks. In the majority of cases, however, the healing was somewhat delayed.

The writer divided the cases on the basis of the severity of the diabetes into three groups: First, mild cases in which a rigid diet caused a disappearance of the sugar from the urine promptly, or in which sugar had existed for years without any evident disturbance on the part of the patient. Secondly, moderately severe cases, in which the sugar disappeared from the urine only after weeks of strict diet. And, thirdly, the severe cases, in which strict diet either did not affect the amount of sugar or only slightly diminished it, and in some of which di-acetic acid was present. Thirteen of the thirty-three cases collected belonged to the first, or mild group. These all recovered, the average period of healing being nine weeks. In none of these cases was the diabetes made worse by the operation. Six cases were tested for the presence of di-acetic acid before and after operation, in one of which it was present after the operation and in one it was present before.

Of the cases of group two, or those of moderate severity, there were

five, in all of which the wounds healed and the diabetes was not made worse by the operation.

Of the nine cases of group three, or the severe grade of diabetes, four died as a result of the operation; three in coma on the fourth, sixth and eighth days; and one from general weakness. In two cases there was a slight transitory coma.

Of the thirty-eight cases, then, only three died of coma.

As a result of his studies and observations upon operations for acute mastoiditis, the writer arrived at the following conclusions: First, in the mild forms of diabetes the operation may temporarily increase the excretion of sugar without any unfavorable effect upon the patient; second, the operation does not appear to increase the danger of the transformation of a mild case into a severe one; third, the occurrence of coma as a result of the operation is to be feared only in those cases in which the diabetes is of a severe grade, or in which di-acetic acid is present in the urine before the operation; fourth, a mild case of diabetes is no contrary indication to an operation otherwise indicated; fifth, operations indicated for the preservation of life are also justifiable in moderately severe as well as in severe cases of diabetes.

Bone Cysts. A Consideration of the Benign and Adamantine Dentigerous Cysts of the Jaw and Benign Cysts of the Long Pipe Bones.

JOSEPH C. BLOODGOOD. *Journal of American Medical Association, October 15, 1904, Vol. XLIII, p. 1124.*

Recent experience has shown that local recurrence after complete resection for sarcoma of the upper and lower jaw is unusual, but death from internal metastasis is fairly common. When these cases are studied pathologically it is found that the patients who have remained well have been subject to special types of sarcoma quite different from the tumors removed from patients ultimately dying from internal metastasis, or to put it differently a cure was not effected in the latter group of cases even after amputation at the highest joint, as internal metastasis occurs early and is present at the time of operation and that the second group of cases were subjected to an unnecessarily extensive operation. Experience has demonstrated that, in some cases as the benign dentigerous cysts of the jaw and medullary giant cell sarcoma, *curetting* is sufficient. In other cases, as the various epulides of the jaw, the periosteal and medullary giant cell sarcoma, the periosteal fibro-sarcoma and osteo-sarcoma, the myxochondro-sarcoma and the cystic adamantine epithelioma, *resection*, the extent of which is indicated by the local infiltration. Amputation is indicated only when the resection would result in a useless limb. Infiltration of muscle is not a positive indication for amputation. In this group of cases, amputation at the highest joint, except due to position of tumor is never called for.

In Group 1 the patients have remained well since operation, the time varying from six months to twelve years. There has been a slight operative mortality and a few cases in which on account of the size and position of tumor it was considered inoperable. (2) Benign cysts of long bones—three cases; benign dentigerous cysts—ten cases; adamantine

epithelioma—twelve cases. (b) Under periosteal sarcomas follows—epulis—twenty-three cases; spindle cell fibro-sarcoma or myxo-sarcoma—eight cases; osteo-sarcoma—eight cases; giant cell sarcoma—three cases. (c) Medullary sarcoma—giant cell tumors (myeloma)—eight cases; myxo-chondro-sarcoma—three cases. Seventy-eight bone tumors of this group are either benign or of relatively low malignancy. Sixty-nine cases are well, two inoperable, two refused operation. Seven died following operation. In six of these cases the tumor involved the upper or lower jaw. A less extensive operation could have been performed, reducing the dangers of operation, but not the probabilities of an ultimate recovery. Group 2 includes patients who have not been cured either because the condition was inoperable or because of death from internal metastasis after operation.

Periosteal tumors—(a) Spindle and round cell sarcoma, six cases; lower jaw, two; long bones, four. Perithelial angio-sarcoma, two cases; long bones, two. Medullary tumors—(2) Spindle and round cell sarcoma—long bones, four cases; perithelial angio-sarcoma long bones, two cases. In these fourteen cases a complete operation was performed. In the twelve cases of long bones a high amputation; in two jaw cases, an extensive resection. In every case death has taken place usually within one year. In only one case was it delayed longer than two years. Sarcoma of upper jaw involving antrum, six cases; all inoperable. Carcinoma of upper jaw, twenty-one cases, sixteen inoperable, one death from pneumonia. Remainder not cured.

There are, therefore, forty-one cases of bone tumors of relatively high malignancy, none of which has been cured.

(1) Benign bone cysts of long bones are rare tumors. Case 1—Bone cysts of humerus, white girl, aged seven, tumor, one year, pathologic fracture. Operation, curetting and drainage, June, 1904, ten months, well. History given August, 1903, apparently healthy one year ago, fell and sustained fracture of upper third of humerus of right arm. Fracture treated by family physician and united. After dressing was removed a swelling was observed and this never disappeared. If swelling had been present before the fracture it had remained unobserved. For one year no symptoms save swelling. Three days after slight fall, the child refused to use arm because of pain. Brought to surgical clinic for this reason. On examination there was a fairly uniform expansion of upper third of humerus easily seen—greatest toward the surgical neck. On palpation soft parts were normal, but one could feel normal shaft of humerus expanding into thin shell of bone, whose surface was not smooth but irregular. In a few places a definite parchment crepitation could be elicited. The area was very tender.

A diagnosis of bone cyst was suggested because sarcoma of the more malignant type in children at this age have caused death by internal metastasis within a year. The only medullary tumors of the long pipe bones which in their growth expand the bone and produce a definite shell are the bone cysts, the myxo-chondro-sarcoma and the giant cell sarcoma. Of the latter two none have been observed in the clinic in patients of this age and none found in literature. OPERATION—tissues

normal until periosteum was separated. Bone beneath was irregular and varied in thickness from one to four millimetres. On removing a piece of the shell of bone a cavity was exposed filled with blood. There was no connective tissue lining and no evidence of cartilage, but as only sufficient bone was removed to allow curetting of cavity is it not improbable that cartilage was present in some part of the wall. After curetting, the cavity was partially packed with gauze, the remainder being allowed to fill with blood clot. Eight weeks later an X-ray picture demonstrated that the cavity was almost completely filled with new bone. The origin of these cysts has been shown by Virchow, Leronie Hoenig and others, to be due to liquefaction of misplaced islands of epiphyseal cartilage, and in the majority of cases cartilage has been found in some parts of the wall.

Heineke has recently published the first case of multiple bone cysts in which X-ray negatives were made. He believes that the cystic degeneration is part of a general osteo-malacia.

Dr. Goldthwaite, of Boston, has confirmed in X-ray studies a similar case of multiple bone cysts in which there is no doubt, clinically, as to the presence of osteo-malacia. The etiology of these multiple bone cysts is apparently entirely different from the single cyst.

Benign dentigerous cysts—Ten cases, upper and lower jaws, four each. Four cases under fifteen years of age. Six between twenty and thirty years of age. Duration of tumor from three months to thirteen years. Tumor is of slow growth and usually painless. Slow expansion of jaw and on palpation a smooth thin shell of bone can be felt. Parchment crepitation usually present. At the exploratory incision the periosteum is normal. Outer shell of bone is smooth, lining the bone is a thin vascular connective tissue membrane. Content of cyst is usually a blood-stained serous fluid. Microscopic—Cholesterin crystals, blood corpuscles, degenerated cells suggesting epithelium, but an epithelial lining has not been demonstrated. Cyst is usually single with a few thin partitions. In three cases a non-erupted tooth was found in recess of cyst. These dentigerous cysts are apparently due to the distention of the connective tissue capsule of a non-erupted tooth. Partial dissection with curetting and drainage effect cure.

(3) Adamantine epithelioma—Twelve cases. Average duration of tumor, six to twenty years. Majority twenty to thirty-five years. Location—In four the tumor projected from alveolar border of the jaw. The tumor was covered with normal mucous membrane and did not invade the bone. In eight cases the epithelial tumor was situated within body of the jaw and in its growth produced an irregular expansion very similar to a dentigerous cyst. A complete resection was done in eleven cases and ten of these have remained well for from one to twelve years. This type of tumor is apparently of low grade of malignancy. There was no metastasis to glands of neck. From its very slow growth it can usually be differentiated from the more magignant neoplasms. The epulis is more apt to be associated with ulceration of the mucous membrane. It may closely resemble a benign dentigerous cyst, but upon exploratory incision there is found not a cavity but a white, finely granular tumor containing connective tissue trabeculae and usually many small

and large cystic cavities. Microscopically—Normal mucous membrane of gum, then a zone of connective tissue, beneath which is the circumscribed tumor, which is composed of branching epithelial alveoli in a connective tissue stroma. Some of the alveoli are cysts lined by the typical adamantine epithelium. Other alveoli are solid with cells showing the various morphologic changes of the adamantine epithelium.

E. F. S.

DERMATOLOGY

Edited by Frederic C. Curtis, M. D., and Harry W. Carey, M. D.

Syphilis Among Physicians. (*Syphilis als Berufskrankheit des Aerzte.*) BLASCHEKO. *Berliner klinische Wochenschrift*, December 30, 1904.

The writer has seen twelve such cases during the year, and assuming that this is the average number of syphilitic infections seen by the dermatologists in Berlin, it means an infection of two per cent. of the medical profession!

The primary lesion in these cases is generally on the finger and its resemblance to a simple infection often delays the diagnosis.

In the differential diagnosis, herpes, postmortem tubercle and chancre must be excluded.

Herpes is differentiated by premonitory neuralgia, followed by groups of vesicles and characterized by a tendency to relapse. A mild lymphangitis is common.

Before the post mortem tubercle takes a warty character, the presence or persistence of enlarged cubital or axillary glands is important. Chancroid on the finger is less frequent than chancre; it has an irregular and undermined edge and responds readily to suitable treatment. If the chancre is small and heals without scar, nothing of its true nature is suspected until indolent swollen lymphatic glands or secondary skin lesions develop.

In one of the cases, in spite of the most careful examination, both by the author and the patient (an intelligent physician), no primary focus could be found so that a diagnosis of syphilis d' emblée (syphilis without chancre) was made. Another possible explanation is an infection by insects, fleas or vermin. The infection can most often be traced back to wounds received during operation, pricks and tears rather than incised wounds, and the danger is increased by the manipulation of syphilitic tissues, as in the extirpation of buboes. Small wounds from instruments, wet with the body fluids of syphilitic patients are as a rule not infectious, because the infecting agent is not so omnipresent as to be in each drop of blood. Infection takes place more often through hang nails; the majority of the author's cases were so infected as a result of vaginal examinations or obstetrical operations.

One case was infected in post mortem examination, a mode of infection excessively rare. No sure protection against infection exists, and, therefore, the physician should consider every patient as a source of infection, upon whom a vaginal examination, surgical or obstetrical operation is done. The examination per vaginam under sheets is specially dangerous; one of these twelve cases was so infected.

When large wounds are present, the surgeon never operates or makes vaginal examination, so that such wounds are seldom infected, but it is the small wounds that are dangerous, because they are overlooked. Infection in surgeons is favored by too energetic hand disinfection before operation and the writer thinks that this is overdone inasmuch as absolute sterilization of the hands is practically impossible. More attention should be given to the quality rather than the quantity of the organisms on the hands by more careful *post-operative* disinfection. A more general use of rubber gloves is imperative.

Every wound, every hangnail should be covered with collodion or plaster or the wound may be treated first with nitrate of silver and then covered. For disinfecting wounds, with which the syphilitic virus has come in contact, Blaschko first washes carefully in soap and water and touches the raw surface with tincture of iodine or hydrogen peroxide. When infection has occurred, the modern intermittent treatment is difficult to carry out, because physicians become overzealous and take continuous treatment oftentimes with bad results. There is no evidence that the extra-genital infections are more severe than others, but the diagnosis is often long delayed.

A physician infected with syphilis should not be excluded from his practice. Only when lesions are present on the hands or arms, should he refrain from operations or manual examinations.

A Contribution to Urticaria. (Beitrag zur Lehre von der Urticaria.)

BAUM. *Berliner klinische Wochenschrift*, No. 1, 1905.

During an investigation of the action of various drugs upon the skin, Baum found that if the skin was first rubbed lightly with emery paper and certain substances were rubbed in, typical urticarial wheals were produced. This was first produced by applying ethyl glycoll; later other drugs were found to act in like manner. To study the method of formation of the wheals, the web of a frog's foot was used. The frog was first given curare and the web suitably arranged under the microscope and then a drop of ethyl glycoll applied. Changes in the circulation developed at once, the capillaries were widely dilated, the arteries and veins less so, and the blood current slightly accelerated in them. In the capillaries the stream became gradually slower until finally stasis developed. The veins were in no way obstructed. After ten to twenty minutes oedema began. The capillaries in the oedematous area were narrowed and the circulation in them was practically normal. There was no interference with the flow of the blood into the veins. The border of the oedema macroscopically corresponds with the microscopic border, the dilated capillaries at the periphery being sharply defined from the contracted capillaries in the center. There was no exudation of red or white blood corpuscles. After thirty to forty minutes the capillaries contracted and the blood stream was accelerated. In forty-five minutes the vessels and tissues were normal. The whole phenomenon is a quickly formed oedema due to capillary dilatation without injury to the tissues. The appearance of the wheals in man and frog were alike and corresponded exactly to the wheals of urticaria.

Later, in endeavoring to repeat the experiments the writer was not successful in frogs caught during the summer months, but upon the same lot of winter frogs the results were again successful. This he thinks is in support of the view that a certain disposition must be present before any drug will act. The process, therefore, is an active hyperæmia, but whether the serum was the result of an inflammation, an exudation, secretion or transudation was not determined.

Persistent Erythema Nodosum. (Ueber die persistierende Form des Erythema nodosum.)

PICK. *Archiv für Dermatologie und Syphilis*, LXXII Bd., 3 Heft, 1904.

At the beginning of the paper is given a short description of the disease first described as érythéma induré by Bazin, then follows a report of two such cases. In the first case the onset was one year previous, and was marked by rapid painful swelling of the leg, at first bright red, later bluish in color. After the general swelling had subsided, indurated nodules were found situated deep in the skin, movable on the underlying tissues, but attached to the skin above. Vesicles developed over some of the nodules and after rupturing left the skin with a brown pigmentation. No local or general reaction followed the administration of five milligrammes of tuberculin. In the second case the onset was six months previous with great pain and swelling of the leg and the infiltrations were still present. On each leg were two bright red nodules, the size of a quarter and bright red in color. Areas of brownish pigmentation were present on each leg and mark the location of former nodules. Superficially the nodules were of cartilaginous consistency and in the depth were densely indurated.

A definite general reaction followed the administration of ten milligrammes of tuberculin. At the end of four months there was a marked improvement, only brownish pigmentations persisted.

Histologically the nodules were located in the pars reticularis cutis, not sharply circumscribed and accompanied by atrophy of the surrounding fat tissue. The vessels showed a mesarteritis often leading to obliteration. The inflammatory reaction was slight, but among the inflammatory cells were epithelioid cells and giant cells. The œdema and leucocytic infiltration characteristic of acute erythema nodosum were absent. The acute painful onset was supposed to be due to embolism and this is probably the primary change. Necrosis and caseation in the neighborhood of the vessels in a part of the cases and a positive reaction to tuberculin indicate their tuberculous nature. The writer believes there are two forms of this disease, in one indurated nodules develop acutely and persist for a long time, finally leaving pigmentations in the skin, and in the other the nodules develop gradually, there is a tendency to ulcerate and it develops often in association with tuberculosis cutis (scrofuloderma) with which it is closely associated. The two cases reported are placed in the first form.

ALBANY MEDICAL ANNALS

Original Communications

CANCER OF THE UTERINE CERVIX; ITS CLASSIFICATION AND EXTENSION.

Read before the Medical Society of the County of Albany, April 12, 1905.

By JOHN A. SAMPSON, M. D.,

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Cancer of the uterus may be divided into two main forms. First, the less frequent one, which arises in the fundus of the uterus, usually grows slowly and does not extend beyond the uterus until after a long period of time. For these reasons the diagnosis is usually made early in the course of the disease, and the operative treatment of cancer of the fundus is attended with a low primary mortality and a relatively high percentage of cures.

On the other hand, the form of growth which arises in the cervix of the uterus is five or six times as frequent as the other, runs a much more rapid course and soon invades, by direct extension or metastases, the neighboring parts. For these reasons the greater percentage of the cases present themselves too late for anything but palliative treatment, and hysterectomy for cancer of the uterine cervix is attended with a high primary mortality and a low percentage of cures.

I wish to consider only cancer of the uterine cervix in this communication; because it is the more frequent and malignant form, and also because it should be diagnosed earlier, and can be cured in a large percentage of cases if operated upon in its incipency. In addition a small percentage of even the extensive cases may be cured.

I have recently studied twenty-seven specimens of cancer of the uterine cervix, in which there had been a wide excision of

the primary growth; and in nineteen of these cases the pelvic lymph nodes were also removed. The uterus was studied in sagittal sections and the parametria in cross sections. From these sections a reconstruction was made of the growth, demonstrating its form and also its relation to the specimen removed. The study of the pelvic lymph nodes is nearly complete, and so far 134 have been studied and cancer has been either found or excluded from each lymph node.

Fortunately, only a very few of these specimens had been curetted, and an excellent opportunity presented itself to study the natural morphology of the growth and the changes it undergoes as the disease progresses. As a result of these studies an attempt has been made to make a classification of cancer of the uterine cervix, and also to determine how the growth extends beyond the cervix.

CLASSIFICATION OF CANCER OF THE UTERINE CERVIX ACCORDING TO THE LOCATION OF THE GROWTH.

As we may group all forms of uterine cancer according to the part of the uterus, whether fundus or cervix, from which the growth arises, so we may divide the forms of cervical cancer into two main groups:

(I) the larger group, where the growth arises from that portion of the cervix which protrudes into the cervical canal, the so-called cancer of the portio-vaginalis (Figs. I, II, III and IV);

(II) the smaller group, where the growth arises within the cervical canal, the so-called intracervical cancer (Figs. V, VI, VII, and VIII).

Cancer arising from the vaginal portion of the cervix is usually diagnosed earlier than when it arises within the cervical canal, both because it is more apt to give rise to earlier symptoms and also because it can be more readily detected on inspection or palpation.

CLASSIFICATION OF CANCER OF THE UTERINE CERVIX ACCORDING TO THE EPITHELIUM FROM WHICH IT ARISES.

The vaginal portion of the cervix is normally covered by stratified epithelium which is directly continuous with that of the vagina and usually ends at the external os but may extend up into the cervical canal for varying distances which is especially true as women grow older. The cervical canal, on the other hand, is usually lined by high cylindrical cells which generally

Legends for Plates to Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."

Albany Medical Annals, May, 1905

FIG. I. SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; EVERTING OR VEGETATIVE FORM.

Patient 30 years old; one child, 15 years ago; bleeding for 5 months; living and well, 4 months since the operation. (Operation by Dr. Holden).

Sagittal section of uterus ($\times\frac{1}{2}$), shows that the growth (in black) is limited to the vaginal surface of the cervix and is invading the deep structures of the posterior cervical lip. (J. H. H. Gyn. Path., No. 8155.)

FIG. II. SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; INVERTING OR INFILTRATING FORM; MEDULLARY WITH NECROSIS.

Patient 54 years old; 8 children; menopause 1 year ago; bleeding for 2 months; living and well, 2 years and 2 months since the operation. (Operation by the Author).

Sagittal section of the uterus ($\times\frac{1}{2}$) shows that the growth is limited almost entirely to the anterior cervical lip and as a result of necrosis a deep ulcer has formed. The growth has superficially involved the anterior vaginal wall and also the posterior cervical lip. (J. H. H. Gyn. Path., No. 6543). See also Fig. IX.

FIG. III. SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; INVERTING OR INFILTRATING FORM; MEDULLARY WITH NECROSIS.

Patient 36 years old; one child; bleeding for only 10 days; recurrence; died 11 months after operation. (Operation by the Author).

Sagittal section of uterus ($\times\frac{1}{2}$), shows a more advanced stage in the development of the growth than in Fig. II. The disease has apparently begun in the posterior cervical lip, and by direct extension has invaded the deep tissues of the cervix, surrounding the cervical canal and in places involving its mucosa. (J. H. H. Gyn. Path., No. 7077). See also Fig. XI.

FIG. IV. SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; INVERTING OR INFILTRATING FORM; MEDULLARY WITH NECROSIS.

Patient 40 years old; 4 children; bleeding for 18 months; living and well, 2 years and 10 months since the operation. (Operation by the Author).

Sagittal section of the uterus ($\times\frac{1}{2}$), shows still more advanced stage in the progress of the growth. The centre of the cervix has sloughed away, leaving a cavity lined by friable cancerous tissues. The growth is beginning to extend above the internal os, invading the body of the uterus, and had also extended out into the right parametrium, necessitating the resection of the lower end of the right ureter and the implantation of its renal end into the bladder. (J. H. H. Gyn. Path., No. 6009)

FIG. V. SQUAMOUS CELL CARCINOMA OF THE CERVICAL CANAL; EVERTING OR VEGETATIVE FORM.

Patient 63 years old; 7 children; menopause 16 years ago; bleeding for 3 months; died the 7th day following the operation. (Operation by the Author.)

Sagittal section of uterus ($\times\frac{1}{2}$) shows that the growth has occluded the cervical canal, causing a pyometra; and is extending into the body of the uterus, en masse, and as thread like processes (a). (b) is an epiploical appendage of the sigmoid which has become adherent to the posterior surface of the uterus and is being invaded by the cancer. (J. H. H. Gyn. Path., No. 7658).

FIG. VI. SQUAMOUS CELL CARCINOMA OF THE CERVICAL CANAL; INVERTING OR INFILTRATING FORM; SCIRRHUS.

Patient 64 (?) years old; 9 children; menopause 16 years ago; bleeding for only 2 days; living and well 4 months since the operation. (Operation by Dr. Burnam).

Sagittal section of the uterus ($\times\frac{1}{2}$) shows that the growth is situated entirely within the cervix and is invading the cervical tissue in a diffuse manner. Such a growth can be diagnosed in its incipency only by the curette. (J. H. H. Gyn. Path., No. 8153).

FIG. VII. SQUAMOUS CELL CARCINOMA OF THE CERVICAL CANAL; INVERTING OR INFILTRATING FORM; MEDULLARY WITH NECROSIS.

Patient 48 years old; 8 children; still menstruating; bleeding for 18 months; living and well, 1 year and 10 months since the operation. (Operation by the Author).

Sagittal section of the uterus ($\times\frac{1}{2}$) shows the well-known "crater" lined by cancerous tissue, which has resulted from necrosis of the center of the growth. The vaginal portion of the cervix is not involved by the growth and the cancer is just beginning to invade the body of the uterus. Metastases were present in the iliac lymph nodes. (J. H. H. Gyn. Path., No. 6860).

FIG. VIII. ADENO OR CYLINDRICAL CELL CARCINOMA OF THE CERVICAL CANAL; INVERTING OR INFILTRATING FORM; SCIRRHUS.

Patient 39 years old; 4 children; still menstruating; bleeding for 17 months; recurrence, but living 2 years after the operation. (Operation by the Author.)

Sagittal section of the uterus ($\times\frac{1}{2}$) shows that a glandular type of growth has arisen from within the cervical canal and is diffusely invading the cervical tissue and extending up into the body of the uterus. (J. H. H. Gyn. Path., No. 6603).

To Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."

Albany Medical Annals, May, 1905.

Squamous cell Carcinoma of the Vaginal Portion of the Uterine Cervix; Fig. I, Everting Form; Figs. II, III and IV different steps of the Inverting Form.



Fig. I.

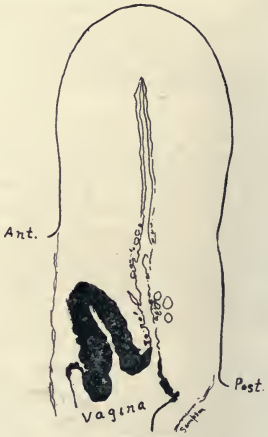


Fig. II.

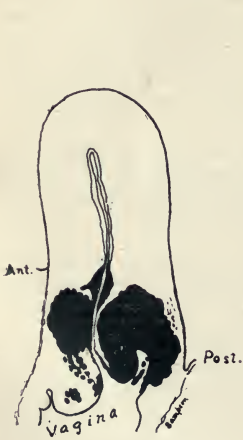


Fig. III.

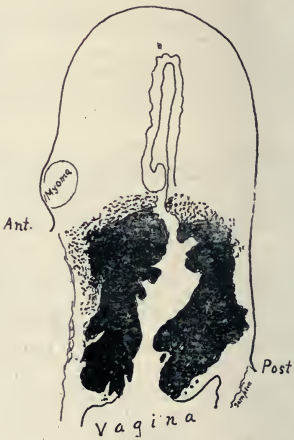


Fig. IV.

To Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."

Albany Medical Annals, May, 1905.

Carcinoma of the Cervical Canal. Fig. V, Squamous Cell, Everting; Figs. VI, and VII, Squamous Cell, Inverting; Fig. VIII, Adeno Carcinoma, Inverting.

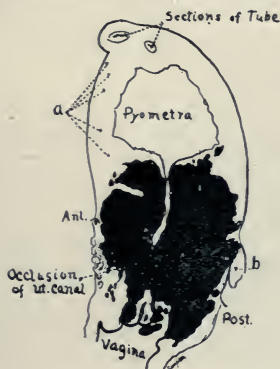


Fig. V.

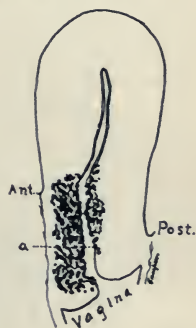


Fig. VI.

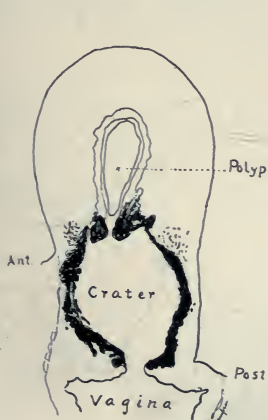


Fig. VII.

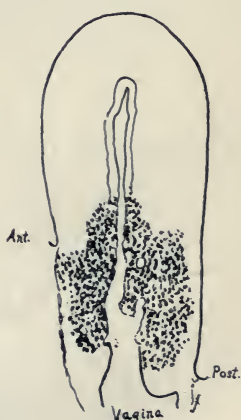


Fig. VIII.

To Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."

Albany Medical Annals, May, 1905

Fig. IX. RECONSTRUCTION SHOWING RELATION BETWEEN THE CANCER AND THE SPECIMEN REMOVED BY OPERATION. (x $\frac{1}{2}$.)

A small primary growth, widely excised; but it has already metastasized to the two iliac lymph nodes. A small growth does not exclude the presence of metastases. Same case as shown in Fig. II.

Fig. X. SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; INVERTING OR INFILTRATING FORM; SCIRRHUS.

Patient 37 years old; 7 children; bleeding for 2 $\frac{1}{2}$ years; living and well, 1 year since the operation. (Operation by the Author.)

Extensive primary growth, extending out into the parametrium and also involving the bladder, necessitating resection of the base of the bladder and reimplanting the ureters into the bladder.

Although the primary growth is extensive it apparently had not yet metastasized to the pelvic lymph nodes. An extensive primary growth does not always indicate that metastases have taken place. (J. H. H. Gyn. Path., No. 7658.)

Fig. XI—RECONSTRUCTION SHOWING RELATION BETWEEN THE CANCER AND THE SPECIMEN REMOVED BY OPERATION. (x $\frac{1}{2}$.)

By direct extension the growth has invaded the left parametrium as fine thread-like processes in the sheaths of the nerves. A metastasis is present in a large lymph node in the right parametrium which has apparently checked the further advance of the disease on that side. This node was absent on the left side and metastases are present in the iliac lymph nodes. Same case as shown in Fig. III.

Fig. XII—SQUAMOUS CELL CARCINOMA OF THE VAGINAL PORTION OF THE UTERINE CERVIX; INVERTING OR INFILTRATING FORM; SCIRRHUS.

Patient 37 years old; 2 children; bleeding for 6 months; recurrence but living 9 months after operation. (Operation by the Author.)

By direct extension the growth has involved both parametra, and has also extended down the posterior vaginal wall. Metastases have taken place to small intravascular lymph node in left parametrium and also to an iliac lymph node on each side. It can be seen that a small lymph node does not exclude cancer. (J. H. H. Gyn. Path., No. 7370.)

Fig. XIII—RECONSTRUCTION SHOWING RELATION BETWEEN THE CANCER AND SPECIMEN REMOVED BY OPERATION. (x $\frac{1}{2}$.)

Squamous cell Carcinoma of the Vaginal Portion of the Uterine Cervix; Inverting or Infiltrating Form; Medullary with extensive Necrosis.

Patient 37 years old; 6 children; bleeding 10 months; living and well 10 months after the operation. (Operation by the Author.)

By direct extension the growth has invaded both parametric and the anterior wall of the rectum, necessitating an excision of a portion of the latter. The growth has also invaded the body of the uterus extending en masse and as thread-like processes. Metastases have occurred to the iliac lymph nodes on both sides. (J. H. H. Gyn. Path., No. 7419.)

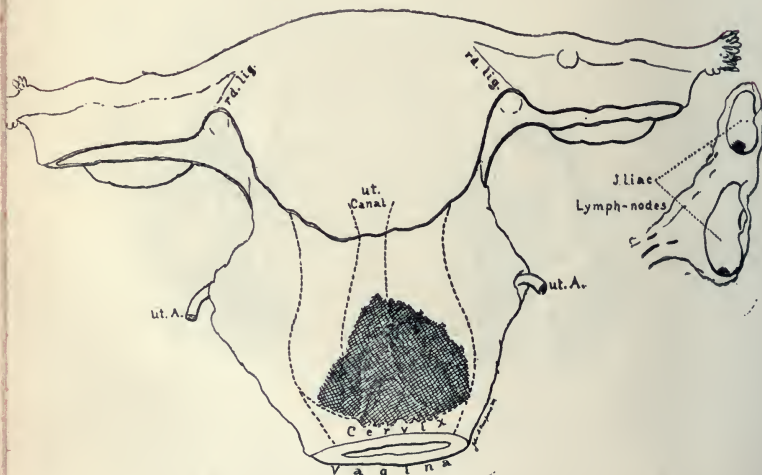


Fig. IX.

To Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."
Albany Medical Annals, May, 1905.

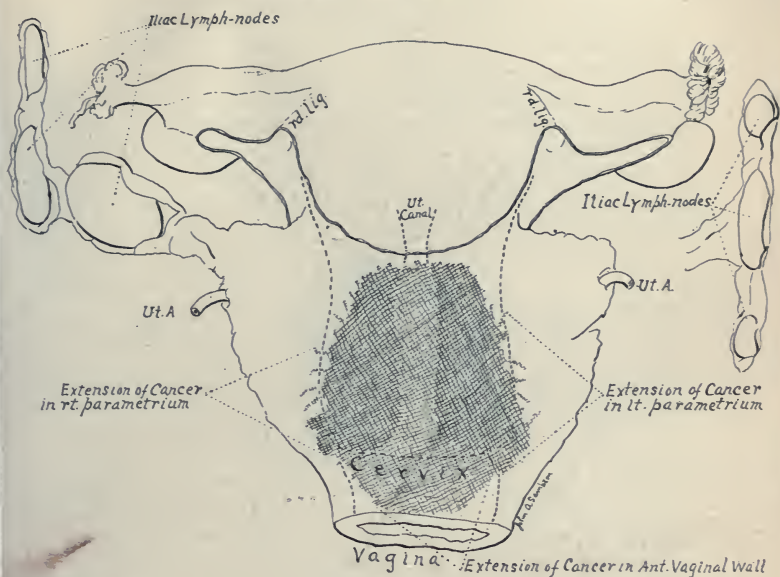


Fig. X.

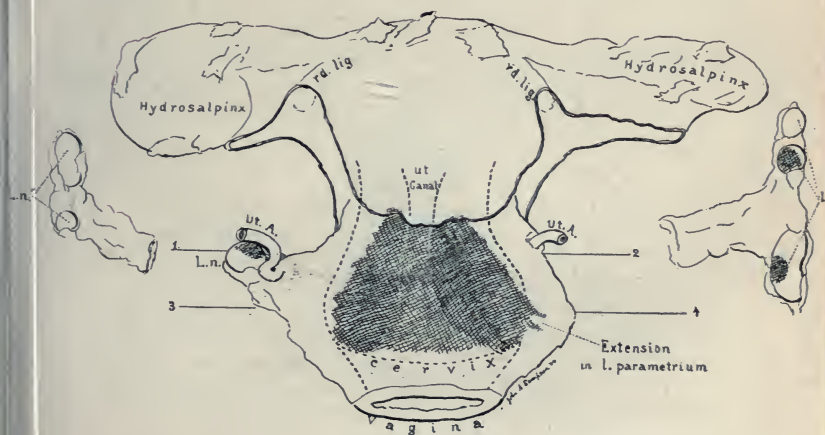


Fig. XI.

To Illustrate Dr. Sampson's Article on "Cancer of the Uterine Cervix."

Albany Medical Annals, May, 1905.

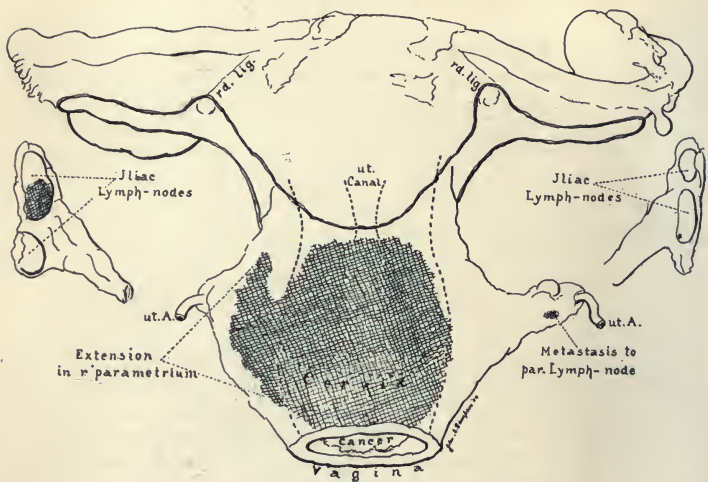


Fig. XII.

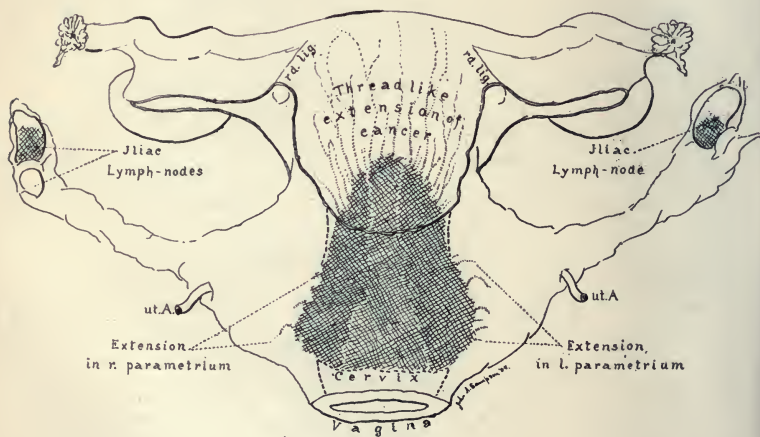


Fig. XIII.

meet the stratified epithelium at the external os, but may extend beyond, over the vaginal portion of the cervix.

As one would infer, cancer arising from these two forms of mucosa differ, histologically and sometimes clinically, from each other. Those arising from the stratified epithelium, no matter the place of origin, whether within the cervical canal (Fig. VI) or from the vaginal portion (Fig. I) of the cervix, are known as squamous cell carcinoma. Likewise the growths arising from the cylindrical epithelium or glands of the cervix, no matter its place of origin, are known as the cylindrical cell or adeno-carcinoma (Fig. VIII).

Other forms of malignant growths may also occur in the cervix, such as the endotheliomata and sarcomata, but these are very seldom found.

The squamous cell cancers are the most important because they are the most frequent. In the twenty-seven specimens recently studied by me, twenty-four of them were of this variety, while two were cylindrical cell or adeno-carcinoma, and in one specimen both varieties were apparently present. While the cylindrical cell variety of cancer is less frequent than the other, it is important because it is very malignant, apparently running a more rapid course and metastasizing earlier than the squamous cell variety. It is also more apt to arise within the cervical canal, which favors an insidious onset and renders its detection more difficult.

Both growths are undoubtedly influenced by such factors as the age and general condition of the patient, and especially by such changes as occur during menstruation, pregnancy and also those occurring during and after the menopause.

CLASSIFICATION OF CANCER OF THE UTERINE CERVIX ACCORDING TO THE MORPHOLOGY OF THE GROWTH.

We have stated that cancer of the uterine cervix may be grouped according to the part of the cervix from which it starts, as the cervical canal or vaginal portion of the cervix. We have also classified them according to the type of epithelium from which the cancer arises, as the squamous cell cancer and the cylindrical cell cancer. Another important classification, both from a pathological and especially from a clinical standpoint, is one based on the morphology of the growth.

We do not know why in one case the growth seems to "evert"

giving rise to a papillary or cauliflower mass, or in another case apparently the same type of growth "inverts" forming a nodule of cancerous tissue in the cervical wall with but very little evidence of any disease on the surface. The malignant process may be circumscribed in one instance, and apparently the same type of growth may be diffusely scattered throughout the cervical tissue in another. Intermediate forms, and sometimes both processes are present in the same specimen. Possibly in the progress of the disease, the growth may pass from one type into another. Still one can usually classify them according to the predominating type, and the following classification assists in grouping the cases and understanding the various manifestations of the disease:

(I) everting or vegetative (synonyms—cauliflower, papillary and proliferating),

(II) inverting or infiltrating (synonyms—nodular, ulcerative and parenchymatous).

The everting vegetative form of cancer is more frequently found arising from the portio vaginalis (Fig. I) and is usually of the squamous cell variety, but may develop within the canal, (Fig. V) and may also arise from cylindrical cells or glands of the cervix. It apparently begins as a proliferation of the cervical epithelium, and associated with this there is a reaction of the cervical tissue giving rise to a papillary outgrowth from the cervix consisting of a central core of vascular connecting tissue, which is covered by the proliferated epithelial cells. This outgrowth may arise from any portion of the cervix and may form either a pedunculated or a sessile tumor. As the disease progresses the tumor increases in size, either spreading over the surface of the cervix and vagina or growing out into and filling the lumen of the vagina or cervical canal. At the same time it invades the deeper tissues. In one case there may be an enormous mass filling the vagina with but little extension of the disease into the deeper tissue, and in another case the external manifestation of the growth may be small while its extension into the deeper tissues may be great.

In Fig. I is shown a sagittal section of the uterus where an everting or vegetative form of the growth has involved both lips of the cervix and is invading the deeper tissues of the posterior lip. In this case neither the cervical canal or vagina are involved by the growth. The everting or vegetative form of

the growth is probably the least malignant type, and it fortunately gives rise to bleeding early in the course of the disease. Its usual situation on the vaginal portion of the cervix and also its morphology renders its detection, on palpation or inspection, comparatively easy.

The inverting or infiltrating form of cancer begins as a proliferation of the epithelium, and here the papillary formation is absent or plays a minor part. The growth seems to "invert" itself into the tissues of the cervix and usually gives rise to a more or less circumscribed mass of cancerous tissue with very little stroma, except about the periphery of the growth. These are the so-called medullary or nodular cancers. The disease process less frequently invades the cervical tissue in a diffuse manner forming a growth in which the stroma predominates, the so-called scirrhus cancer.

In the inverting or infiltrating type of growth the main extension of the disease is through the deeper structures of the cervical wall, and while it may spread over the mucous surfaces of the cervical canal or vagina, this mode of extension usually plays a minor part.

In the specimen shown in Fig. II, the growth began in the anterior cervical lip and has invaded the deeper structures of the anterior wall of the cervix with but very little extension over the surface. In the specimen shown in Fig. III, the growth started in the posterior lip of the cervix and has extended through the cervical tissue encircling the cervical canal and only in places involving the cervical mucosa. Associated with the expansion of the growth, the nourishment of its centre is frequently impaired and necrosis occurs giving rise to the well known cancerous ulcer, hence the name "ulcerative cancer," (see Figs. II and III). As the disease progresses and replaces the tissues of the cervix, the central core including the cervical canal frequently sloughs away and the centre of the cervix is converted into craterous cavity lined by necrotic cancerous tissue, as shown in Fig. IV. Nodular, ulcerative and craterous cancer, are only different steps in the progress of the inverting form of cervical cancer.

There is less sloughing in the scirrhus type of the growth because the groups of cancer cells are separated from each other by cervical tissue which is thus better able to maintain the nutrition of the growth. The hardness of this type of the growth

is not only due to the absence of necrosis but also to the presence of the large amount of stroma.

The inverting or infiltrating variety is the most frequent type of growth met with, both in the vaginal portion of the cervix and also in the cervical canal; the medullary form is more frequently found than the scirrhus.

The inverting or infiltrating variety is also more malignant than the everting or vegetative, as it soon invades the deeper tissues and more frequently gives rise to metastases. Unfortunately this variety may not cause bleeding or a foul discharge until after the disease has extended beyond the uterus. Its detection by inspection or palpation, unless ulceration is present, is also more difficult than in the everting or vegetative form.

The same changes occur in the inverting type of growth in the cervical canal as in those arising from the portio-vaginalis (see Figs. VI and VII) and as has been stated its diagnosis is usually more difficult. Frequently however, as the intracervical type of the growth progresses the vaginal portion of the cervix becomes indurated, due to the infiltration of the tissues beneath the mucosa by the growth. This tissue becomes necrotic, the disease extends out to the vaginal mucosa and the latter becomes retracted and thrown into folds. As a result of this the entire vaginal portion of the cervix becomes shrunken. This induration and retraction of the cervix is as characteristic of this form of cancer, as is the retraction of the skin or nipple characteristic of cancer of the breast.

The classification and grouping of cancer of the cervix are important as enabling us to study the disease more thoroughly from all sides. More important studies, however, come from the investigations of the invasion of the neighboring or distant parts for we realize that the extent of this invasion determines whether or not the case is operable, and also whether or not the cancer manifests itself after operation.

THE EXTENSION OF CANCER BEYOND THE CERVIX OF THE UTERUS.

Body of the uterus. The level of the internal os usually marks the limit of the upward extension in cancer of the cervix, and if the body of the uterus is involved it is only late in the course of the disease. When the body does become involved it is usually by a direct extension through the deep tissues of the uterine wall, either as a mass of cancerous tissue, or as thread-

like processes of cancer (see Fig. XIII). The growth less frequently extends along the mucosa of the uterine cavity (Fig. VIII). Metastases to the mucosa or uterine wall are very seldom found.

Vagina. The vagina is frequently involved, in the evertive or vegetative form of growth, by a direct extension of the disease over its surface. The growth may also extend through the deeper tissues of the vaginal wall, forming a lump or induration beneath the vaginal mucosa (Fig. X), which later may appear on the surface giving rise to an ulcer (Fig. XII) or papillary outgrowth. Another form of vaginal involvement is the so-called "vaginal implantation," which not always is a true implantation but may be a retrograde lymphatic metastasis or a direct extension of the cancer along a lymph channel. In one specimen I was able to demonstrate that the cancerous nodule in the vaginal wall was united to the primary tumor by a thread-like process of cancerous tissue, thus showing that it was a direct extension of the growth in that case.

Rectum. If the rectum becomes involved, it is usually only late in the progress of the disease. The involvement of the rectum may occur from an obliteration of the cul-de-sac (Fig. XIII), or a direct extension from the posterior vaginal wall which has become invaded by the cancer.

Bladder. The bladder is much more frequently involved and earlier in the course of the disease than is the rectum (Fig. X). The anterior surface of the cervix rests against the bladder, while the posterior surface of the cervix is separated from the rectum by the cul-de-sac of Douglass which affords a natural protection against the extension of the disease.

Parametrium. We may speak of this as the vascular and lymphatic hilum of the cervix. Through this tissue the main lymph channels pass on their way to the pelvic lymph nodes, and into this tissue cancer usually first extends beyond the cervix either by direct extension or metastasis. Of the twenty-seven operative cases, the parametrium was involved either by direct extension or metastasis in seventeen. In fourteen instances there was a direct extension of the growth from the cervix, either in the form of delicate processes as shown in Figs. X, XI and XIII, or as a mass of cancerous tissue as shown in Fig. XII. In nine instances metastases had occurred to the lymph structures of the parametrium and in only one of these

cases was the cancer found in the lymph channel itself, while in the other eight cases the cancer cells had apparently passed through the lymph channels without involving them and had lodged in a lymph node. There are present three types of lymph nodes in the parametrium, to any one of which cancer may metastasize.

(I) A relatively large lymph node is occasionally found near the place where the uterine artery crosses the ureter, and this may become involved by cancer as shown in Fig. XI.

(II) There are normally present in the parametrium small lymph nodes to which cancer may metastasize, not shown in any of the illustrations in this article.

(III) In four of the twenty-seven specimens studied, another type of parametrial lymph node was found. It apparently develops in the walls of the main lymph channels and protrudes into its lumen like a sponge. Its significance is not known, but it undoubtedly serves as a check to the extension of the cancer. In three of these four cases cancer had metastasized to one or more of these nodes. In the left parametrium of Fig. XII is indicated one of these nodes to which cancer has metastasized.

The frequency of the extension of the disease into the parametrium shows the necessity of a wide excision of this tissue. The nature of this extension, frequently as fine cancerous threads or as metastases, indicates that it is impossible to clinically determine its presence. For these reasons there should be wide excision of this tissue in every instance.

METASTASES OF CANCER OF THE UTERINE CERVIX TO THE PELVIC LYMPHATICS.

We now know that in from thirty to fifty per cent. of the operable cases of cancer of the uterine cervix, the disease has metastasized to the pelvic lymph nodes. Cancer was found in nine out of nineteen specimens where I have studied the pelvic lymph nodes removed at operation.

We realize that there is no relation between the size of the primary growth and the presence or absence of involvement of the pelvic lymph nodes. The primary growth may be small, and yet metastases may have occurred to the pelvic lymph nodes as shown in Fig. IX. This is very unfortunate for we can never tell clinically whether or not metastases have taken place. Furthermore a large pelvic lymph node is not necessarily can-

cerous, (see the nodes in Fig. X) and a small node does not exclude cancer (see nodes on left side of pelvis in Figs. XI and XII). Only by the use of the microscope can we exclude cancer from the pelvic lymph nodes.

On the other hand, in an extensive primary growth the disease may still be local and the pelvic lymph nodes free from cancer. I think we may conclude that in at least forty per cent of the extensive cases the disease has not yet metastasized. This is very fortunate, for it means that an extensive local operation, without removal of the pelvic lymph nodes, may cure even some of the cases which are usually considered hopeless.

Is the removal of the pelvic lymphatics of any curative value? We realize that it is operatively impossible to remove all the abdominal and pelvic lymphatics. We can remove the lymphatics about the external and internal iliac vessels but it adds an additional half hour to the operation. By a little more time, necessitating the freeing of the rectum, we can clean out the pelvis as high as the promitory of the sacrum, but the higher lymph nodes are practically beyond our reach. Recent studies by Schauta (*Monat. f. Geb. u. Gyn.*, 1904, XIX, 475-521) show that the higher lymph nodes may be involved and yet the lower ones may be free, and especially if the lower ones are involved the higher ones are also apt to be cancerous.

Wertheim (*Wien. klin. Woch.*, 1904, XVII, 783-785) states that the disease has recurred in all his cases in which the lymph nodes were involved at the time of operation. For these reasons Wertheim considers the removal of the pelvic lymph nodes of prognostic value only. This opinion is held by many, including Clark (*Progressive Medicine*, 1904, pg. 137), who was one of the first to advocate their removal.

Anatomical and pathological studies have shown us that while undoubtedly the iliac lymph nodes may frequently be the first involved, the others higher up may be simultaneously or previously involved. I studied the abdominal and pelvic lymphatics in three cases, who have died after a hysterectomy for cancer of the cervix. While these were cases with extensive primary growths, both the pelvic and abdominal lymphatics were free from cancer in two. In one case, however, three lymph nodes were found to be cancerous; one of these was situated above the bifurcation of the aorta, demonstrating that the case was operatively incurable.

We must conclude that the percentage of cases which we can cure by the removal of the pelvic lymph nodes, if they are involved by cancer, is small; so small that it may be more than offset by the increased primary mortality which must occur from the prolonged operation necessary for their removal. I believe, however, that *if* at the close of the local operation *the patient is in good condition*, that the removal of the easily accessible iliac lymph nodes is indicated, for it is of prognostic value any way and is undoubtedly of some curative value in a small percentage of the cases. These are the lymph nodes most frequently involved in the early extension of the disease.

RESUMÉ.

Two anatomical groups of cancer of the uterine cervix must be considered; first, those arising from the *vaginal portion* of the cervix and secondly, the smaller group which arises from *within* the *cervical canal*. These two groups may be classified histologically, into the *squamous cell carcinoma* which is the more frequent variety and into the *cylindrical cell* or *adeno-carcinoma* which is much less frequent, but usually more malignant.

The two histological varieties of cancer of the uterine cervix, in turn, may be subdivided into groups according to the morphology of the growth, whether *everting*, i. e., vegetative; or *inverting*, i. e., infiltrating, and the latter whether medullary or scirrhus. Other sub-classifications, based on the finer histological studies of the various types of growth, may also be made, but more work is needed along these lines.

The classification of uterine cancer is of importance in studying the clinical manifestations of the disease in the different stages of its development, and also the pathological changes upon which these clinical signs depend. Furthermore we are able to determine the relative malignancy of each group. We have learned that the cylindrical cell cancer is more malignant than the squamous cell variety, and that the diagnosis in those developing within the cervical canal is more difficult than those arising from the vaginal portion of the cervix. The inverting or infiltrating type of growth is more frequent than the everting of vegetative; it is also more malignant, and unfortunately its diagnosis is usually more difficult.

A study of the specimens removed in twenty-seven cases has shown that the growth had extended beyond the uterus in twenty of these cases, and that in at least twelve of these twenty

cases metastases had occurred, either to the parametrial or iliac lymph nodes. These studies demonstrate that there is no relation between the size of the primary growth and the presence or absence of metastases; a small growth may give rise to metastases, while a large one may not. Furthermore only by the use of the microscope can we exclude cancer from the parametrium or pelvic lymphatics; a soft feeling parametrium may contain cancer, and an indurated one may be free from cancer. Likewise a large lymph node may be free from cancer, and cancer may metastasize to a small lymph node without changing its size or consistency.

A study of the pelvic lymph nodes has taught us that only a small percentage of the cases can be cured after the disease has metastasized, because it is impossible to remove all the lymph nodes which may be involved in the metastasis of the growth. Probably the removal of the pelvic lymph nodes is chiefly of prognostic value and is of little curative value, especially as the increase in the primary mortality resulting from the additional time necessary to remove them may more than balance the gain in the percentage of cures caused by their removal. This, unfortunately, is especially true in the advanced cases where the more radical operations are most needed.

The more radical operation is demanded, but with certain limitations. It must be borne in mind that the object of the surgeon should be to cure as large a percentage as possible of all cases coming under his care. By operating only on the favorable cases the primary mortality will be low and the percentage of cures high of the cases operated upon, but only a very small percentage of all cases seen will be cured. By employing a more radical operation and operating on all cases where there is a chance for a cure, the percentage of cures of those operated upon may not be any higher but that of all cases seen by the surgeon will be; and probably the primary operative mortality will also be greater, because the disease is further advanced in many of the cases. As I have emphasized before (*Jour. A. M. A.*, 1904, XLIII, 1,362), we must consider two distinct classes of operative cases, according to their indications and limitations:

(I) patients where the uterus is freely movable and the growth apparently early;

(II) those in which the uterus is fixed from any cause (cancerous or non-cancerous) and its removal difficult.

In the first class of cases the patients are usually in good condition and the operation is relatively easy. We should make a wide excision of the primary growth, *freeing the lower portion of the ureters so as to remove as much of the parametrium as possible*. If at the close of this part of the operation, the patient is in good condition, then the regional iliac lymph nodes may be removed. (It can be seen that I place less stress in this procedure than formerly.) By doing this we improve the chances of a cure. The patient being in excellent condition and the parts freely movable, the operation may be quickly accomplished. With experience and our present technique, the primary mortality is but very little or not any greater than the less radical abdominal operation and the percentage of cures will undoubtedly be higher. Wertheim, in his latest report, states that of thirty-one cases operated upon by him, three years ago and longer, nineteen are at present free from cancer, thus giving a percentage of cures of 22.5 per cent. of all the cases seen by him at that time, as compared with similar results in this country of only five to eight per cent. or even less.

In the second group of cases, the patients are apt to be in poor condition and the uterus adherent, which makes the operation difficult. If the operation is indicated, the first demand is a wide excision of the primary growth, resecting portions of the bladder and ureters if necessary. The removal of the regional pelvic lymphatics may be omitted unless the patient is in very good condition at the close of the operation. In these cases the operation is difficult and the primary mortality necessarily high, especially as the patients are apt to be in poor condition and unable to stand a severe operation. These are the cases which are ordinarily sent home to die, and in which death from cancer is 100 per cent if not operated upon. Of course these cases must be chosen, for an operation is not justified unless the entire local growth can apparently be removed, and the patient clearly understands the dangers and uncertainty of the operation. In such cases, however, we may expect to cure some of these cases, because adhesions and indurations are not always cancerous; and even in the extensive primary growths probably at least forty per cent of them have not yet metastasized and a wide excision of the primary growth should cure the diseased condition.

By the more radical operation we may hope to *cure a larger*

percentage of all cases seen than by the former methods, but we still realize that many cases are not diagnosed until after the disease has extended beyond operative treatment, and that in a large percentage of the cases operated upon the growth will remanifest itself.

Both the medical profession and the laity have been made to realize the importance of an early diagnosis in the cure of other diseased conditions. The above is especially applicable in cancer of the uterine cervix, because a large percentage of the cases should be cured, if operated upon in their incipency and the diagnosis should be made in a large percentage of these cases before the disease extends beyond operative treatment. Here we must consider briefly the curability of cancer of the cervix and its early diagnosis.

Curability of cancer of the uterine cervix—At the close of the first fifteen years of the gynecological department of the Johns Hopkins Hospital, in August, 1904, sixteen women, twenty-four per cent of the operative cases heard from, and nineteen per cent of all operated upon, were living and well, five years and longer after a hysterectomy had been done in that hospital for carcinoma of the cervix. In four of these cases over ten years had elapsed since the operation. It must be granted that a certain percentage of the cases operated upon can be cured.

The early diagnosis in uterine cancer—Bleeding, in some form was present in about ninety-three per cent. of the 412 cases of cancer of the uterine cervix admitted to the Johns Hopkins Hospital. The bleeding may be slight, "only a show" appearing at irregular intervals as on exertion, after coitus, using a douche or straining at stool. In other cases the bleeding may be slight but constant, the patient noticing that her clothes are slightly soiled on taking them off at night. Sometimes the bleeding is more profuse, so that it may appear like a prolonged menstruation, an irregular menstruation or a return of the flow after the menopause. In still other cases there may be severe haemorrhages. On this symptom is based the most favorable outlook of this condition, for in over sixty per cent of these 412 cases there was a history of *neglected* uterine bleeding for over six months. Even in the twenty-seven cases reported tonight which have all been operated upon within the last three years, neglected uterine bleeding for over six months was present in fourteen, *i. e.*, over half of them. When we realize that the

clinical course of cancer of the uterine cervix is usually rapid; the patients rarely living over three years and about three-quarters of them dying within two years and one-third within one year after the first manifestation of the disease, we can see how important an early diagnosis is and also how important it is that the patient should be operated upon as soon as possible after making the diagnosis. A short period of neglected uterine bleeding or other symptoms referable to uterine trouble, may permit the growth to extend so far that the disease becomes incurable. The above is shown in the fact that only from fifteen to thirty per cent of the cases in this country are operable when diagnosed, and that only from ten to twenty-five per cent of the cases operated upon are apparently free from cancer five years after the operation.

We, the medical profession of this country, are certainly directly responsible for the welfare of our patients and also their knowledge of medical subjects. Should we not see to it that they realize that any uterine bleeding or other symptom referable to the pelvic organ may be indicative of some slight trouble, which can usually be easily remedied, but on the other hand, may be the first manifestation of cancer which if operated upon in its incipency should be cured in a large percentage of the cases?

ABDOMINAL PAIN FROM ADHESIONS.

By CHARLES GREENE CUMSTON, M. D.,

Boston, Mass.

Intra-abdominal pain resulting from the presence of adhesions does not certainly endanger the patient's life, but the effect produced is continual discomfort and real pain may increase to such intensity as to make life miserable, driving the unfortunate patient to morphinism, or even alcoholism. In milder cases neurasthenia will be the outcome and along with all this the general condition suffers while the organism may sometimes show evidences of marked marasmus.

These intra-abdominal pains have little conformity; they are sometimes continuous, at others they suddenly appear in the form of intense colic, occasionally they arise from traumatic action, or by a change in the position of the patient. Then

again one may meet with cases where the pain is deep seated and obstinate, giving rise to a boring or pressing sensation.

As reflex manifestations of peritoneal irritation one meets with nausea, hiccough, vomiting and distaste for food. In spite of their great variety disturbances resulting from adhesions will in some cases show characteristic symptoms so that one may at least suspect their presence with quite a degree of certainty. The pain is very often localized at one spot and here there is sometimes a circumscribed pain on pressure. When pain occurs in paroxysms, the attacks are apt to resemble one another and always present the same train of symptoms. Another point which is most characteristic and which is not infrequently met with is that the pain may become lessened, or increased, by certain muscular movements, or positions of the body, as for example when the patient rises or turns over on one side, or the other. Thus, for example, a female having adhesions resulting from an ulcer in the stomach complained of pain, which was always localized to the left of the umbilicus, and an exploratory incision showed the presence of adhesions of the stomach with the anterior abdominal wall in the left hypochondriac region. In another case a woman complained of pains occurring at the site of the abdominal incision following ovariectomy, which made their appearance particularly when the patient walked, or stood up; they were relieved when the patient assumed the recumbent position and then only when the left lower limb was drawn up against the abdomen. At the operation the omentum was found flattened out toward the left and adherent to the abdominal scar and a cure resulted in both these cases after the adhesions had been freed.

It is most peculiar that very frequently the intensity of the pain has no relation to the extent of the adhesions giving rise to it, because, for example, very extensive adhesions arising in tuberculous peritonitis often cause no disturbances, while, in other cases, a single thin shred will cause intense pain. The explanation of all this resides in the peculiar sensitive conditions of the peritoneal cavity, which have been studied principally by Lennander during laparotomies done under local anesthesia. According to his observations the intestines, mesentery, stomach, liver, gall bladder, the large omentum, the mucous membrane of the bladder are devoid of any sensibility from cutting, burning, or squeezing, whereas the parietal peritoneum is ex-

ceedingly susceptible to pain, especially when it is stretched or pulled upon. Adhesions, therefore, only cause pain when they are inserted on the parietal peritoneum and become stretched or pulled upon. Pains arising in intestinal stenosis, as a result of tetanic contraction of the muscular layer of the gut, are exceptional, and are only produced secondarily by adhesions and naturally occur at every point where a stenosis of the gut is present.

At the spot of the parietal peritoneum where the adhesions exist the pain resulting is usually perfectly localized and from this point it extends outward into the surrounding parts. At this point at times also occurs a circumscribed pain on pressure, as has already been mentioned.

The breaking up of adhesions existing between the abdominal viscera and parietal peritoneum must of necessity produce some stretching of the parietal peritoneum and, therefore, the operation is painful, while breaking down of the adhesions, which are in no way connected with the parietal peritoneum, is, according to Lennander, a painless proceeding.

Stretching of adhesions is partly due to the weight of the adherent organs, their changing of position, hanging, as they do to a certain degree on these adhesions, and not on their anatomical means of support, such as ligaments, mesenteries, etc. In stomach and intestinal adhesions with the parietal peritoneum pain is frequently caused by peristalsis for which reason it increases in intensity after the patient has taken food on account of active peristaltic movement; for this reason in gastric ulcer it may be confounded with those pains, which more especially occur after eating and are caused entirely by the irritation of the food on the ulcer, but not by adhesions. Adhesions of the omentum with the anterior abdominal wall cause pain, either as result of peristalsis of the stomach, or because coils of intestine push themselves into the pocket between the abdominal wall and that portion of the omentum which is adherent, and, on account of their weight, push the latter downwards. In infrequent cases stretching is produced by extension and tension of the abdominal wall when by a backward motion of the upper part of the body, or hyperextension of the thigh, the distance between the ribs and the pubic bone becomes increased. Pain observed in hernia of the linea alba containing omentum, as well as that resulting from adhesions present

in irreducible hernia is also probably produced in one of the manners described and should also be included among disturbances arising from adhesions.

The disparity between the stretching of the adhesions and the intensity of the resulting pain tends consequently to occur when extensive adhesions with the parietal peritoneum exist, because it is readily conceived that a small, narrow band of adhesion can cause much more marked symptoms than when the adhesions are quite extensive. When the surface of adhesion is considerable the stretching becomes divided and also since the surface is large the influence upon the single nerve endings is too trifling to result in pain.

According to the site one may classify the various disturbances due to adhesions into three groups, namely, the gastric, intestinal and pelvic forms. The gastric form, produced by adhesions of the stomach, occurring most frequently in ulcer of the organ, cholelithiasis, following traumatism and in carcinoma ventriculi; the latter occasionally makes its presence known by severe cardialgia, especially when the stomach is full and then one will have a continuous dull pain. The pains may radiate towards the breast or back. In some cases they depend upon the ingestion of food, while at other times they are produced by a mechanical shock, or change of position.

The objective proof of the existence of such adhesions is hardly possible, as can readily be understood, unless the case comes to operation or to the autopsy table. However, Rosenheim has given several indications which make the presence of gastric adhesions a matter of probability. An extensive and extreme sensitiveness when pressure is exercised over the epigastrium, especially when the pain shoots out from the right over the border of the stomach, is certainly a diagnostic element pointing to the probable presence of adhesions connected with the anterior stomach wall. Those on the left side give rise to severe pain which can be produced deeply down when the left lower border of the thorax is somewhat briskly pulled upwards. Even in adhesions of the posterior gastric wall one will occasionally encounter pain on pressure over the first and second lumbar vertebrae, as well as the structures bordering them on the left.

The disturbances arising from intestinal adhesions occasionally make themselves evident in the form of a suddenly oc-

curring and acute pain due to stenosis of the gut caused by the adhesions. The pain is of short duration and disappears as suddenly as it comes and is usually followed by a discharge of fluid feces, or large quantities of flatus. In other instances the pain is caused primarily by adhesions following tumors, or intestinal ulceration, appendicitis and after laparotomy, etc., and according to the location of the adhesions, most varied groups of symptoms will appear.

The pelvic form is the one best known as compared with the two preceding forms and certainly occurs much more frequently than either of the former, firstly on account of the frequency of inflammatory processes in the uterus and adnexa and secondly, because the adhesions, on account of the limited space offered by the true pelvis, are usually inserted on the parietal peritoneum, and, for this reason, produce pains and finally, as a result of the frequently changing relationship of the bladder and rectum, as well as the congestive hyperemia of the genitalia during menstrual period, the adhesions are very apt to be exposed to stretching. Therefore, pain at stool, or during micturition, as well as during the menses, are characteristic of perimetritic adhesions. Besides this, slight pain occurs when the patient strains, or if the body is subjected to any shock, such as riding, walking on uneven ground, etc., sudden changes of the body position and during coitus.

A particularly characteristic group of symptoms from adhesions are found in the "*typical peritoneal adhesion*" of Gersunsky, which he observed in twenty-four cases. This consisted in a bandlet of adhesion on the sigmoid flexure, which caused this organ to be fixed laterally. Besides there usually exists adhesions of the appendix, as well as delicate ones running between the uterus, ovaries, tubes, rectum and peritoneum of the pelvic floor. Women thus affected present other symptoms of perimetritic inflammatory processes; they complain of pain on both sides of the lower abdominal region, McBurney's point is sensitive to pressure and there is another point lying symmetrically on the left.

The objective proof that sometimes disturbances are produced by adhesions is only to be demonstrated with certainty in cases of the pelvic form. In the gastric and intestinal forms, as well as in many instances of the pelvic form, it is absolutely impossible to detect adhesions by palpation and one can only make

a probable diagnosis, which will usually result in a laparotomy and this will clear up all doubt. The diagnosis is often made very difficult from the fact that the patient's history offers absolutely no point which would lead one to suppose that the existence of adhesions might be probable. The reason for this is because the symptoms only appear years after the primary pathologic process which gave rise to them has subsided, which, on account of the slight severity, is soon forgotten by the patient.

In making a differential diagnosis the most varied pathologic conditions of the abdomen have to be considered, especially those which have pain as one of their principal symptoms. Symptoms produced by organic changes, such as carcinoma, or ulcer of the stomach, biliary lithiasis, renal calculus, appendicitis, etc., can generally be excluded by carefully going over the history of the case. This is, however, sometimes impossible, especially in cases of colic due to adhesion of the gall bladder and pain resulting from adhesions following appendicitis. The differential diagnosis becomes more difficult when dealing with functional disturbances, such as nervous gastralgia, visceral and pelvic gastralgia, spastic constipation of neurosthenia, attacks of pains in hysteria, especially because a patient having adhesions not infrequently becomes neurosthenic as a result of the persistent troubles to which they give rise and, therefore, it may be erroneously assumed that the case is probably one of nerves. I am inclined to think that pain generally considered as a symptom is in surgery, at least, rather underestimated than overrated. In such cases, however, the history will probably show that the symptoms, if they are of a nervous nature, are secondary to some organic change.

When giving an opinion relative to the amount of injury sustained in an accident, one should take seriously into consideration disturbances which may arise from the formation of adhesions following an abdominal contusion, particularly if there are any causes to suspect simulation.

By careful observation of all the symptoms a fairly certain diagnosis can be reached in spite of the many difficulties present. When arising from the presence of adhesions they are never relieved by medical treatment and are extremely obstinate so that the typical characteristics of the pain and the form of the attacks will put one on the right road to a diagnosis. A point of fixed pain always recurring at the same spot has a real signifi-

cance, which too frequently is looked upon as neurotic and to which the vague term of neuralgia is given, when in reality the true lesions are mechanical and curable. In doubtful cases where the general condition shows evidences of being affected, an exploratory laparotomy is certainly indicated.

The treatment of adhesions is purely surgical, at least in all the severer forms. After the abdomen has been opened the adhesions should be looked for and broken down, and when present in the form of long bands and strands, these should be, if possible, excised in order to prevent a recurrence. Since, in the majority of cases, a single bandlike adhesion is the cause of the disturbance, a complete cure will be attained and this has now been proven by a long series of reported cases from many observers.

In cases where the adhesions are extensive and numerous, it is often very difficult to break them up completely, so that the operation frequently does not bring about the desired result on account of a recurrence. Therefore, it is preferable in cases where ileus from adhesions is brought about to perform gastroenterostomy. It is only in the pelvic form that a cure may occasionally be brought about by massage. Massage is also quite serviceable in hastening the absorption of an old exudate.

BLOOD PRESSURE.

Read before the Medical Society of Troy and Vicinity, March 7, 1905.

By WILLIAM KIRK, JR., M. D.

The resistance to pressure upon the arteries is what we recognize as arterial pressure. Its degree depends upon the amount of resistance to the outflow offered by the arteries and capillaries.

During the ventricular systole the pressure within the arteries is greatly increased, inasmuch as the arteries receive during that period as much blood as they lost during the whole cardiac cycle. The escape of blood from the arterial system is mainly regulated by the contraction or relaxation of the muscular fibres of the arterioles and in all probability by the contraction and dilatation of the capillaries. The arterioles are always contracted to a certain degree, yielding a little or contracting a little as circumstances demand. The resistance to the onward flow always retains a certain amount of blood within the arterial

system so that it is never empty between the ventricular systoles. Hence it is that during the ventricular diastole the arteries are always perceptible and their contents offer resistance to the compressing fingers.

History.—Hales¹ was the first to measure the blood pressure. This he did by connecting a tall glass tube with the crural artery of a horse. The height to which the blood rose in the tube indicated the pressure in the vessel. Poiseuille², nearly half a century later, applied the mercurial manometer, an instrument which had already been used in physics, to the measurement of blood pressure. Ludwig³ improved this, making the manometer self-registering by means of a float in the open limb supporting a style which wrote on a revolving drum, the whole arrangement being called a kymograph. The method now used is to adjust upon an artery an instrument known as a sphygmomanometer consisting essentially of a hollow rubber pad or bag containing a liquid or air and connected with a metallic pressure-gauge graduated beforehand by comparison with a mercurial manometer.

*The Hill and Barnard Instrument*⁴ consists of a bag inflated with air until the pulsation indicated by index of pressure-gauge reaches the maximum. The mean pressure shown by the gauge at this point is approximately equal to the mean arterial pressure. The manometer of this instrument is a delicate metal one, the dial is graduated from thirty to two hundred and fifty millimetres (mercury), the needle magnifies the oscillations of the pulse wave, the stem of the manometer has a lateral branch to which the tube leading from the armlet, which is the above mentioned bag made of rubber, is attached by a screw-cap connection; and a straight branch to which the pump, like a hand bicycle-pump, is attached with a valve for the slow escape of air. Like all delicate metal manometers the readings tend to become inaccurate and need frequently to be standardized. *The Von Basch Instrument*,⁵ constructed in 1876, in its original form was the first perfected sphygmomanometer adopted to clinical use. This consisted of a bag containing fluid as a compressing mechanism, thus obtaining for the first time pressure per unit of surface. The second respect in which it differed from other early instruments was the use of a mercury manometer for the measurement of the pressure within the bag necessary to wholly compress the artery. In this way was made possible a com-

parison of results with the direct estimations of the physiologist. The pelotte compresses the artery and as pressure is increased the water is forced out of the pelotte into the closed arm of the manometer which at each moment registers the exact pressure exerted over the artery.

In 1889 *Potain's*⁶ instrument replaced water with air, the pressure of which is raised by a bulb connected with the circuit by an extra branch tube. Defects in these two instruments are due to the method of application. They measure the pressure necessary to obliterate the lumen of the artery. The skin and adipose tissue require six to eight millimetres additional pressure, and are only adapted to the estimation of the pressure changes in one individual.

*Gärtner's Tonometer*⁷ Depends upon change of the color of the skin, as a means of determining systolic pressure. It uses circular compression by air applied to the finger, as the Riva-Rocci instrument applies it to the arm. The return of color to the skin of the blanched finger, the practical application of which we owe to Gärtner, gives the subjective part in blood-pressure determinations to our most accurate sense-perception, sight, while the Riva-Rocci depends upon the more fallible touch. A completely conscious patient may cooperate by indicating the instant at which the pulse returns in the blanched finger-end.

Graphic records of blood-pressure are of equal value with charted temperature and pulse. We owe to Cushing⁸ the introduction of practical blood-pressure charts.

The whole mechanism of the circulation has to do with the maintenance of high-pressure or low-pressure in one part or another of the vascular system as may be demanded. It is easy to see that the maintenance of the circulation is not a question of the degree of tension in any part of the circulatory system, but of a proper relation in tension between pressure in the arteries where the blood is stored and the points at which it is needed. In health, muscular exercise at first raises arterial pressure, but finally, after the exercise has been continued for some time, the pressure falls again to normal. The same is true in regard to the effect of mental effort. During increase of pressure due to exercise there is a large amount of blood in the arteries. This is obtained from the large veins in the abdomen which act as a source of supply from which in health blood can be

drawn to flush any part of the system. This tide of blood between the digestive organs and the systemic area is illustrated in many ways. Thus, the coldness of the surface after eating indicates that the tide has set toward the digestive organs. Indigestion following exercise after eating, and even more after strong emotion, show that the tide has set the other way. Good mental condition in patient suffering from acute peritonitis may very well be due to the spasm of all the abdominal muscles preventing the accumulation of large quantities of blood in this part of the body. The arterial system is really a reservoir of blood in which the area of a cross-section of the combined vessels very rapidly increases from the heart outward. In this series of passages the blood is contained and held under pressure by a muscular envelope. From this reservoir the blood escapes for use through the arterioles and capillaries, and the office of the heart is to pump into this reservoir sufficient blood to maintain the pressure depleted by the blood used by the capillaries. This naturally creates a flow of blood from the heart to the periphery, but the immediate use of the heart is to maintain this arterial pressure. Low tension cases are all those in which inflammation or degeneration of the heart muscle itself, its envelopes or its valves, has primarily interfered with the blood-propelling function of the heart. High tension cases are all those in which disorder of the arterioles, due to toxemia or other causes, has brought about an unreasonable demand, on the part of the system, for a high tension in the arterial reservoir. Low arterial pressure is only to be regarded as pathological when it is so little that the tissues and organs are not properly supplied with blood. There are instances where the heart is perfectly able and willing to produce more arterial pressure but the peripheral circulation is so relaxed that it is not needed. Variations in the normal require that mental and physical rest be secured in investigations of blood pressure. A vast majority of adults show systolic pressure of 100 to 130 millimetres (with twelve centimetres armlet); children, ninety to one hundred and ten millimetres after second year, women slightly lower than men. The diastolic pressure will be twenty-five to forty millimetres lower.

Pathological Alterations.—Agonal pressure of forty millimetres (Riva-Rocci), reported by Hensen, compared to Cook and Brigg's¹⁰ case of cerebral hemorrhage with about four-hun-

dred millimetres (Riva-Rocci) represent the extremes recorded in literature by reliable observers.

Continued fall in pressure is far more significant of danger than actual numerical value. Generally, high tension is noted in (a) arterio-sclerosis, and (b) renal disease. Low pressure is noted in (a) advanced phthisis, (b) carcinoma and (c) general paresis of insane.

Collapse and *Shock* are two conditions in which hypotension is more than a symptom. It is the chief source of danger to life. Crile's mechanical support of the circulation by the pneumatic suit is the direct outcome of his blood-pressure researches and promises much in the treatment of surgical shock. In *chronic interstitial nephritis* high pressure is usually more than in any other disease (200 to 240 millimetres is not uncommon). Large intracerebral hemorrhage causes extreme functional hypertension, even up to 350 to 400 millimetres, figures unapproached in any other condition. Cushing¹¹ advises removing flap and evacuating the clot as a remedial measure and emphasizes the danger of hypotension medication.

Angina pectoris is another disease in which the study of blood-pressure is of great importance. In diagnosis, hypertension is important as evidence. Janeway reports three fatal cases without increased pressure. Normal blood-pressure in suspected cases is corroborative of non-cardio-vascular disease.

In *typhoid fever* the sphygmomanometer has most value as a help to diagnosis of perforation and its differentiation from concealed hemorrhage. Typhoid is generally hypotensive. A fall in pressure begins in the first and second week and goes hand in hand with the development of toxemia. A rapid fall suggests hemorrhage. Perforation is marked by a rapid rise.

Crile found a heightening of tension in *peritonitis*, from other causes, in twenty surgical patients. A later fall of pressure as a terminal event in subsequent peritonitis must be distinguished from the initial hypertension.

Mercandino found more uniformly a rise from bath treatment than from any other stimulant measure. Least of all does alcohol deserve the name of stimulant, as it is without influence upon blood-pressure or the force of the heart.

It is not feasible to attempt a complete review of the subject of blood-pressure in this paper but two other conditions well deserve attention.

Pneumonia.—This is a disease in which, contrary to a prevalent idea, there is no uniformity of result in blood-pressure estimations. Changes are slight. Giglioli in fifty cases found that the change in pressure was slight in favorable ones. In severe cases he saw a fall of eighty to ninety millimetres upon the fourth or fifth day.

Tuberculosis is a disease in which low tension is a constant symptom. In cases with chronic toxemia slight increase of tension has been noted by Naumann.

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Clinical and Pathological Notes

A Case of Tetanus. By DOUGLAS C. MORIARTY, M. D.

Read before the Saratoga Springs Medical Society, February 3d, 1905.

Mr. President and Gentlemen:

I have for your consideration this evening a traumatism, presenting some interesting features for discussion.

H. B. H., age 45, male, mechanic, native of United States, man of good physique and habits, and used to hard work; negative family history.

On November 4th, this man was accidentally caught in a large set of gears while at work in a tannery. The tissues above the elbow were caught between the cogs of a large wheel and drawn up to and including the shoulder joint. The machinery lacerated the skin and muscular tissues very extensively and deeply, anteriorly nearly to the median line, and posteriorly to within four inches of the median line; superiorly about the middle of the clavicle, and inferiorly to the level of the ninth or tenth rib. The upper two-thirds of the humerus, including

the articular surface, the outer third of the clavicle, and the articular surface of the scapula were comminuted. The muscular and bony tissues were crushed and lacerated, and all vessels ruptured; while the arm was not completely torn from the body, it was nearly so. He was able to extricate himself and walk or crawl to assistance, after being thus terribly injured. He suffered from intense pain and shock, the latter of course being due both to the traumatism and the hemorrhage. Drs. Sherman and Castree who saw him immediately after the traumatism despaired of his rallying, and had a most difficult time in controlling the hemorrhage and adjusting the primary dressing. The axillary vessels were controlled temporarily by a tourniquet, while other vessels were controlled with artery forceps which were left in place. A sterile dressing was adjusted, and the man made as comfortable as possible, though an aseptic technique was practically impossible. From the time of the injury, nine o'clock in the morning, until four or five o'clock in the afternoon, it seemed to his physicians that he must die. At this time he reacted somewhat, and was brought to the Saratoga hospital from Ballston.

I saw him on his arrival, and his condition was so critical from shock that I did not attempt to examine the wound, as there was no marked oozing. We endeavored to control the pain and to stimulate reaction by the use of salines in generous quantities in the cellular tissue by the needle. These were continued for thirty-six hours at varying intervals, on an average every three hours. During this period it was possible to give him considerable liquid nourishment and water. After thirty-six hours the dressings were becoming saturated with bloody serum and were decidedly foul, making it necessary to dress the wound. We found there had been no hemorrhage since the original dressing, but an extensive exudation of serum; the wound was pronouncedly septic. His condition was still critical, and did not warrant anything other than the cleaning of the wound and dressing with fresh gauze.

On Monday, November 7th, seventy-eight hours after the injury, he had reacted markedly; his pulse was 110 by count and of fair volume, and his temperature was ninety-nine degrees Fahrenheit; he was comfortable for the first time, and his delirium had about disappeared. We concluded it was justifiable under these circumstances to give him an anesthetic, which was accord-

ingly done, and the arm amputated and the wound cleaned up; the artery forceps were removed, the wound dressed, and the patient returned to his bed in good condition. The operation was of course a very short one, nothing being attempted in the way of covering up the very large area of lacerated tissue, either by skin grafting or sliding the connective tissues.

His condition continued to improve under the salines and a carefully selected nutritious diet until November 8th, four days after the accident, when on making my evening visit he complained of his jaw being a little sore and stiff, with a great deal of pain in the right shoulder and side, which had come on during the afternoon and which was spasmodic in character. His temperature which had been 99.2 degrees in the morning, with a pulse of 100, increased to 102, with a pulse of 120. His respirations were essentially normal from the time of his arrival until now, when they were increased to twenty-four. Because of the spasmodic pain in his side and the distress in his jaw, we at once diagnosed tetanus. He was given tetanus antitoxin in doses of twenty cubic centimeters every four hours for three doses, the first one at eleven, P. M. This was increased to fifty cubic centimetres the following morning, which was as soon as it was available in this quantity. He was also given full doses of chloral hydrate and morphia to control the pain and contractions which continued to grow rapidly worse. From the evening of November 8th, when the trouble with his jaw was first noticed, his condition grew progressively and rapidly worse; the temperature continued to increase, as did the heart beats, until at his death it was 104 degrees, with pulse 180. The pain was almost unbearable. He would have local contractures, involving the site of the wound every three to eight minutes, while his jaw was more rigid and deglutition was almost impossible; his breathing was more and more labored and painful, and six hours before dissolution moist rales were present throughout the lung area. This condition continued, in spite of the antitoxin and the liberal use of chloral hydrate and morphia, until two o'clock the morning of November 12th, when he had a severe spasm and died.

There are two interesting and instructive features in this case, either of which is worthy of your most careful thought. One is that of shock. The treatment of this condition requires both skill and judgment if the life is to be saved. There must

be a most careful appreciation of the patient's probable resistance, as well as the impression made on the nerve centers, before any extensive operative procedures are attempted. I am sure I have seen patients hurried to the operating-room and an attempt made to operate, after a severe injury accompanied by an alarming hemorrhage, from which the patient did not recover. At these times, many men believe they are doing that which is essential to save the life of the patient, and that delays are surely taking away all chances. With this, I do not agree, and believe many a life is sacrificed. I agree that there are times when immediate operative procedures are called for in severe traumatism; but I also insist that a careful differential comparison of these conditions is necessary. If the patient is in profound shock, with weak and rapid heart resulting from the injury and hemorrhage, an attempt to give an anesthetic and operate in this condition is almost sure to end in dissolution. Hemorrhage can usually be controlled temporarily by one means or another; then measures may be taken to stop pain, which with salines and warmth will help the patient to react, and reach a condition in which there is a possibility of recovery from anesthetic and operation. I express myself as my experience warrants, realizing fully that some of you may maintain that my suggestions and procedure would only mean a second shock; so why should not this second shock be obviated. It should be if we are able to differentiate our cases, not otherwise.

So I would emphasize my conclusions in cases of severe traumatism that the care necessary to help nature to react is of very much more moment, than the dressing of the wound. In this case, we had to talk very plainly to the family and friends, and explain to them that the man was not in a condition to have any surgery done, and that even to attempt it might cause his death. I submit, however, that we would have less criticism from the family and friends if we dressed the wound at once, than if we leave the patient alone for a sufficient time for him to react. The lay mind always thinks the patient is being neglected or poorly treated, if professional activity is not noted.

The other feature of this case is the infection of the wound with tetanus bacilli. This contingency we should have in mind, if the traumatism involving the lacerations of the skin occurred in a place or manner that an infection from tetanus bacilli

might occur. When I was dressing the wound the third day, I thought of the possibility of tetanus occurring in this case; but the wound was all open, and just the sort of wound that tetanus bacilli should not live in, so that I gave it no further thought. Yet I believe, had I given this man an early immunizing dose of antitoxin, he might have lived. There is no question about the diagnosis, as Dr. Loop was able to find the organism in the tissue taken from the wound, and his findings were corroborated by Dr. Town.

It seems strange that I should have met only two cases of traumatism from cog wheels, and that both of them should have had tetanus. The other case of tetanus to which I refer, I have already reported to this society.

Conservatism in Surgery of the Hand. By FREDERICK J. RESSEGUIE, M. D., *Saratoga Springs, N. Y.*

*Read before the Saratoga Springs Medical Society, March 31, 1905
with Presentation of Patient.*

Mr. President and Gentlemen :

The case I am about to present has no special interest other than perhaps again impressing upon us what may be accomplished by conservatism in surgery of the hand, a subject so well presented some two or three years ago by a member of this society.

It seemed at first as though amputation was imperative in this case, and I was urged to perform same at the time; but it was certain that the members could as well be removed in a few days hence as that time, and I decided to give the man the chance which was justly due him. The results, while they leave much to be desired, are, I am sure you will agree, much better than you could reasonably expect, and while not enough time has elapsed to bring about the proper functions of the fingers, I am of the opinion that as time goes on the usefulness of the hand will be greater.

The case is that of S. M., aged 56, a native of the United States, and a teamster by occupation. While working with a circular saw on the morning of the thirteenth of January, 1905, his hand

was in some way forced against the saw, nearly severing the four fingers. He was immediately brought to my office and an examination of the wound revealed the fact that the saw had entered the dorsal surface of the right hand, on a line corresponding to the base of the first phalangeal joints, had passed obliquely upward and forward, fracturing and comminuting the first row of phalanges, and in the case of the index finger producing a complicated fracture as well. The tendons of the extensor digitorum communis, extensor digiti and extensor minimi digiti were completely severed, and only after diligent searching was I able to secure the severed ends. The fingers were attached to the hand only by the skin and underlying tissue of the palmer surface, including the flexor tendons, leaving a wide gap corresponding to the course of the saw. There was active bleeding from the interosseous and digital branches, and it was for this reason that I feared the outcome of the life of the fingers.

The hand was covered with coal dust and very grimy, as the patient had been loading coal earlier in the day. This was removed as much as possible by scrubbing with green soap and hot water, and the hand immersed in a hot carbolic solution, 1-50. The bleeding vessels were secured and tied with catgut, and several loose pieces of bone were removed, mostly from the index and middle fingers, the latter being shortened about one-quarter inch. The severed ends of the tendons, which had retracted, were then secured and carefully sutured with fine silk, and the wounds closed without drainage. An anterior splint reaching from the elbow to beyond the ends of the fingers was applied and worn for seven weeks, until I was satisfied that good union existed. Non-union persisted for this length of time in the ring finger, but I believe at the present time that union is fairly secure.

Primary union resulted in all the wounds except at one point on the inner surface of the index finger, where a slight mucopurulent discharge still persists.* Although several examinations with a probe have been negative, I am of the opinion that a loose piece of bone, or a small spot of necrosis is the factor we have to deal with.

* NOTE. Since writing the above, and in fact at time of reading before the Society, the slight discharge had ceased, and wound was firmly healed.

Congenital Atresia of the Uterus; with Report of a Case; Operation.

By GEORGE GUSTAVE LEMPE, M. D., *Instructor of Anatomy, Albany Medical College.*

Read before the Medical Society of the County of Albany, April 12, 1905.

About four years ago, a young girl, M. B., 16 years old, came into my office complaining of severe pain caused by a lump or tumor situated in and above the right inguinal region. This tumor had been diagnosed as a hernia, and she had worn a truss for three years. Her gait was almost typical of that accompanying morbus coxae of the right side, the tumor being so painful as to prevent her walking with the body in an erect position.

Palpation of the abdomen revealed a growth or tumor two inches above the middle line of Poupart's ligament, about the size of a small egg, which was freely movable beneath the abdominal walls and very painful to the touch. A rectal or vaginal examination was not made, the patient and parents objecting thereto. Her pulse and temperature were slightly above normal.

Past history.—Father and mother are both in very good health. Patient had the usual diseases of childhood, and is the eldest of nine children. Her brothers and sisters are well, and apparently normal in growth and stature. Patient is small in size for her age, but appears well nourished and in good health. She has not menstruated up to this time, but for the last two or three years she has suffered since appearance of tumor, from cramps and dull pain in the abdomen, once a month at regular intervals.

I advised removal to hospital for exploratory laparotomy. Opening the abdomen in the median line, a large tumor of a dark red color came into view, which seemed to fill the entire pelvic cavity. A long cord-like tube which stretched across the tumor, proved to be the elongated Fallopian tube of the left side. The small egg-like tumor which had been palpable on the outside of the abdomen, was discovered to be the uterus which had been crowded upward and outward into the right iliac region by the large tumor, which was cystic in nature. This cyst contained about three pints of a reddish-brown, syrupy liquid. The ovary on the left side was found to be partly obliterated and adherent to the pedicle of this cyst. The cyst,

together with the elongated Fallopian tube, which was also adherent to the pedicle, and the remaining portion of the left ovary, were removed and sent for examination to the Bender Laboratory, which made the following report:

"Specimen consists of collapsed cyst to which is attached a Fallopian tube. The tube is considerably elongated, its diameter is larger than normal, and its walls are thickened. The cyst's diameter is about seven centimeters in the collapsed state, and consists of a single cavity. Its contents are of a chocolate color, and consist of blood and débris. The remains of an ovary are present on one side of the cyst's attachment to the tube.

"Anatomical Diagnosis.—Unilocular corpus uteum cyst of the ovary. Chronic salpingitis."

The uterus closely resembled the type of uterus foetalis or infantile uterus. The supravaginal portion of the cervix was cone-shaped and hard, and about as long if not somewhat longer than the body of the uterus. The patient made an uneventful recovery, and left the hospital two weeks after operation. About three months later I prevailed upon the patient to submit to an examination per vaginam, and to allow me to dilate the cervix of the uterus, in the hope of facilitating the menstrual flow. This I deemed advisable to determine whether, the cervical canal being patent, the uterus should prove to be of the uterus pubescens type, when menstruation was probable, or whether we had to deal with a case of hypoplasia uteri, where menstruation might be established later, or whether the womb was of the uterus foetalis type, when menstruation was not to be expected.

After dilating the hymen, which was normal in appearance and structure, I tried to enter the cervical canal with a graduated series of sounds, but found the cervix impermeable. The smallest sound would pass into the external os for about one-third of an inch only. I requested an examination under a general anesthetic which was peremptorily refused.

I did not see the patient again for three years, when I was called, and found her suffering from severe pain on the right side. This pain persisted for three or four days, and then suddenly disappeared. These attacks recurred with increasing severity at intervals of four months.

About four months ago they became so severe, that the patient, wearied with pain, and fearing appendicitis, consented to a second exploratory laparotomy.

On opening the abdomen, I found a number of adhesions on the left side, which remained after the first operation, and a large hematomatous mass on the right side surrounding the ovary and tube. The appendix was involved with this hematoma, due to a periappendicular inflammation caused by the degenerative process in progress around the ovary and tube. The body of the uterus since the first operation had become enlarged to about the normal size. The cervix had remained small, elongated and hard. I attempted to pass a sound into the cervix, steadying the body of the uterus through the abdominal incision, but failed. I then decided to remove the uterus, hematoma and appendix, leaving a portion of the cervix uteri. On opening the uterus the whole cervix was found to be solid and a cervical canal nonexistent. The Bender Laboratory reported: "Chronic periappendicitis. Imperforate os uteri. Hematoma involving right ovary, tube and broad ligament."

Patient made a good recovery, and is in excellent health to-day, having gained in weight, and, according to her own statement, feels better than she did six years ago.

We have here *sine dubio*, a case of congenital atresia. The body of the uterus having become enlarged, from the infantile type of uterus, of which no case has yet been recorded, would point to its having been a case of hypoplasia uteri. The large cystic tumor removed at the first operation might have been a corpus luteum cyst, and not an hemato-salpinx as at first supposed. In many cases of hypoplasia uteri the uterus will take on further growth and ultimately attain normal functions and proportions which an infantile or fetal uterus rarely or never does. The occurrence of congenital atresia with hypoplasia uteri would be extremely uncommon, but still more probable and possible in this case than the other hypotheses.

Congenital atresia of the uterus, as we know, is rare and is an anomaly which finds its explanation in the originally solid condition of the ducts of Müller from which it is developed. Uterine atresia as a rule, is not so much an independent malformation, as a complication or concomitant of other anomalies of the organ, such as uterus foetalis, uterus cornuatus or bicornuatus. The occlusion in uterine atresia occurs usually at the cervix, which may be closed by mucosa or by muscle and connective tissue, as in the case described above. This condition may exist without any other apparent malformation, and may remain

undiscovered until puberty, when the collection of menstrual discharges within the dilated uterus or tubes, may give rise to important and puzzling symptoms. A complete absence of the tubes has occurred with marked malformations of the uterus. Atresia of either the abdominal or uterine end of the tube may occur, or an imperforation may exist in any part of the tube.

In contradistinction to the treatment of acquired atresia, all treatment of congenital atresia of the uterus to restore function, has resulted in failure, as far as I have been enabled to ascertain.

Editorial

Immediately a place
 Before his eyes appeared, sad, noisome, dark;
 A lazar-house it seemed, wherein were laid
 Numbers of all diseased, all maladies
 Of ghastly spasm, or racking torture, qualms
 Of heart-sick agony; all feverous kinds,
 Convulsions, epilepsies, fierce catarrhs,
 Intestine stone and ulcer, colic pangs,
 Demoniac frenzy, moping melancholy,
 And moon-struck madness, pining atrophy,
 Marasmus and wide-wasting pestilence,
 Dropsies and asthmas, and joint-racking rheums,
 Dire was the tossing, deep the groans; Despair
 Tended the sick busiest from couch to couch;
 And over them triumphant Death his dart
 Shook, but delayed to strike, though oft invoked
 With vows, as their chief good, and final hope.

JOHN MILTON.

Paradise Lost.



“A good physician out of Nature’s grace.”
 So must we think of Dr. Osler on the eve of
 his departure, in the words of Homer selected
 for his own purpose. As a parting gift to the

country of his adoption, he leaves this volume of addresses, revealing not only his wonderful activity, but his absorbing interest in all things medical. In the eighteen delightful papers are included comments upon almost every topic within the attention of the physician, apt in expression, keen in observation and rich in the analogies which bring medicine in harmony with the daily affairs of life. Through all runs the optimism begot of faith, for to the author, as to the seraph

Abdiel, "faith in all things high comes easy." "Without it, man can do nothing; with it, even with a fragment, as a grain of mustard seed, all things are possible to him." Let no physician miss the pleasure and the profit to be derived from this book. It matters not that it is published in its author's fifty-sixth year, for though his years are years of wisdom, his arteries are of youth.



**Alumni
Day, 1905.**

The Alumni Association of the Albany Medical College will hold its thirty-second annual meeting May 2, 1905, and invitations have been sent to every member of the Association.

The decennial classes, '55, '65, '75, '85 and '95, will hold their reunions after the general alumni meeting, and will have abundant time for the full reports of their historians and social intercourse. '55 and '65 will meet in the Chemical Laboratory, '75 in the Chemical Lecture Room, '80 in the Amphitheatre, '85 in Recitation Room A, and '95 in Recitation Room B.

The Alumni Dinner will be held at the Ten Eyck at eight o'clock. The price of the dinner ticket is two dollars, and members who expect to attend are requested to send to the corresponding secretary, Dr. A. MacFarlane, Albany, N. Y., their acceptances at once, that the committee may know the number to expect. It will be arranged that members of the same classes be seated together.

The following is an outline of the program:

9.30 a. m. Reception in Library.

10.30 a. m. General Alumni Meeting:

Faculty Address of Welcome by Prof. Hermon C. Gordinier,
Reports of Class Historians.

Miscellaneous Business.

President's Address, Dr. John H. Cotter (1878).

Election of Officers.

12.00 m. Reunions of Decennial Classes.

3.00 p. m. Commencement Exercises at Odd Fellows' Hall:
Address by Hon. Judson S. Landon, LL.D.

8.00 p. m. Alumni Dinner at Hotel Ten Eyck.

Scientific Review

SOME INFREQUENT EXTRA-GENITAL LESIONS DUE TO THE GONOCOCCUS.

- I. Sur un Cas d'Infection Général a Gonocoque, avec Localization secondaire,
P. BUSQUET and H. BICHELONNE.
Revue de Medecine, May 1904, XXIV, p. 433.
- II. Concerning a Case of Suppurative Myositis Caused by Micrococcus Gonorrhoeae (Neisser),
NORMAN MACL. HARRIS and LOUIS W. HASKELL, JR.,
Johns Hopkins Hospital Bulletin, Vol. XV, p. 395, December, 1904.
- III. Zwei Falle von Gonokokken sepsis mit Nachweis der Gonokokken im Blute bei Lebzeiten der Patienten,
PAUL KRAUSE,
Berliner klinische Wochenschrift, May, 1904, XLI, s. 492.
- IV. Ueber Phlebitis gonorrhoea,
JULIUS HELLER,
Berliner klinische Wochenschrift, June, 1904, XLI, s. 609
- V. Ueber Stomatitis gonorrhoea beim Erwachsenen,
JURGENS,
Berliner klinische Wochenschrift, June 1904, XLI, s. 629.

As our knowledge of bacteriology and bacteriological technique increases, and as this knowledge is applied with more care in the study of clinical cases, the number and variety of lesions caused by any species of micro-organisms is found to be undergoing an apparently parallel increase, though actually this "increase" is due merely to a more accurate recognition of the causes of disease. Of no organism can this be said more truly than of the gonococcus. At first thought to be capable of causing lesions of mucous membranes only, and more particularly the mucosa of the urethra and the conjunctiva, by the researches of Bumm, Werthheim and many others it has been demonstrated as the cause of many and varied suppurative processes, as well as of true septicæmia and pyæmia. Among the conditions caused by this organism may be mentioned: arthritis, adenitis, abscesses, cystitis, pyonephrosis, salpingitis, peritonitis, pleurisy, endocarditis and septicæmia. The observations upon some of the above lesions are still very scanty, and it has seemed justifiable to review some recently reported instances of pathological conditions caused by this organism.

That a urethritis cannot be considered as merely a local lesion of little importance, but rather as a possible starting point for a much more serious condition is pointed out by

Busquet and Bichelonne. Such condition may be a local extension of the infection to neighboring organs of the genito-urinary tract, an actual invasion of the blood current by the organisms, or merely an absorption of their toxins. This latter toxæmic condition (or perhaps septicæmia) associated with gonorrhœa was first noted by Pidoux in 1866. He called attention to the pallor and frequent cyanosis, the wan listless expression, and the slight but rapid emaciation, all pointing to the influence of the infection upon the entire economy, a condition called "lues gonorrhœica" by the Germans. The writers also point out the frequent presence of fever in this condition, and state that the most important influence is probably an actual gonococcæmia. They mention, however, the work upon the toxins of the gonococcus by DeChristmas and Wasserman. The latter isolated a toxin which upon subcutaneous injection was able to provoke a very sharp inflammatory reaction at the point of inoculation, as well as fever, and muscular and arthritic pains.

Busquet and Bichelonne mention many instances of the isolation of the gonococcus from the blood stream, the first being the work of Bouchard and Capitan in 1878, and from various other locations and in various pathological conditions, as articular, cutaneous, cardio-vascular, ocular, renal, nervous and even cerebral lesions. Though numerous negative observations of blood cultures are known, notably those of Tropezikoff in thirty-two cases, they prove nothing, as the gonococcus probably does not remain long in the circulation; on the other hand, it is either quickly overcome by the bactericidal action of the blood, or becomes localized in some tissue or organ. The isolation and cultivation of the gonococcus is attended by special difficulties, as is emphasized by Prochaska, and this fact probably may explain the lack of success of some investigators.

The writers point out the rarity of abscesses of the subcutaneous or intermuscular connective tissues due to the gonococcus. Such usually occur only in those cases in which the abscess is a direct extension from some lesion of the genital tract. Wertheim's experiments and those of Steinschneider are cited. These experimenters attempted to produce subcutaneous abscesses by the direct injection of pure cultures of the gonococcus, but were able to produce only sharp local inflammatory reactions, without definite purulent collections. When such abscesses have

been found, they were usually in a region the point of some previous injury. Such were the circumstances in the case reported by the writers, in which subsequent to a gonorrhœal urethritis in a young healthy male, an inter-muscular abscess developed in the calf of the leg at the site of a previous hæmatoma. Examination showed gonococci in smears of the pus removed at operation. Cultures on gelatin, agar, bouillon and potato were sterile. Cultures on pleural-fluid-agar showed in forty-eight hours typical growth of gonococci in pure culture.

A somewhat similar case is reported by Harris and Haskell, though in their case no history of previous injury was obtained.

Woman aged thirty-four, married, four children. Had had leucorrhœa for years, especially severe since her last labor; occasional burning sensation on micturition. No definite history of gonorrhœa. For four months she had had a swelling in her back at the junction of the sacral and lumbar regions, and for four weeks a painful swelling of her right calf. No history of arthritis or involvement of the tendon sheaths.

At operation, an abscess containing about three ounces of pus was found in the erector spinæ muscles on both sides; also an abscess containing one and one-half pints of pus under the gastrocnemius and soleus muscles, and extending up into the popliteal space. There was much sloughing of the muscles and their tendons in each location. There was no arthritic involvement. Complete healing occurred in about six weeks. Cultures on hydrocele agar showed typical gonococci in pure culture. There was no growth on any other medium. Cover slips from the pus showed intra- and extra-cellular diplococci, decolorizing by Gram's method.

These writers also review carefully the literature dealing with muscular lesions caused by the organism under consideration or its toxins.

In contrast to the rarity of muscular lesions, the occurrence of general infections with the gonococcus are more common than is usually supposed, and this is especially the case with endocarditis. Krause mentions many cases in the literature which are accompanied by accurate bacteriological observations.

He reports two cases. The first was that of a man twenty-eight years of age, with a gonorrhœal urethritis of four weeks duration. Two weeks after onset he developed an arthritis of his left knee and later of his right great toe, followed by pains

in his chest and back, severe headache and a chill. Physical examination was negative except for a murmurish quality to the first sound at the apex. No urethral discharge was evident, but gonococci were demonstrated in smears from the meatus. The headaches and chest pains continued, the latter being especially severe in the region of the sternum, and were accompanied by a feeling of oppression. Temperature varied from thirty-eight degrees to 39.7 degrees with occasionally high elevations and subsequent rapid fall. Blood cultures showed a few colonies of typical gonococci. The cardiac condition grew worse, definite heart murmurs appeared, together with signs of pericarditis. The pain, dyspnoea and cough increased, and consolidation of the lung was evident. From the mucopurulent sputum gonococci were isolated in cultures and were seen in smears. A second blood culture at this time showed large numbers of gonococci. At autopsy the following lesions were found: fibrous pericarditis, dilatation and hypertrophy of the heart, ulcerative endocarditis of aortic valves, fatty myocarditis, infarct of kidney, bilateral pleurisy with effusion, pneumonia in lower lobes, hæmorrhage in stomach and intestines, fatty degeneration of liver with hypertrophy, ascites.

No growth was obtained in cultures from the pericardium or aortic valves.

The second case was that of a woman who after labor had a sudden rise of temperature without apparent cause. Blood cultures were negative. A week later occurred another rise in temperature with pain in the right knee and in the right costal arch, enlargement of the spleen and leucocytosis. Pelvic examination showed a bilateral pelvic inflammation. Blood culture was again resorted to and gave several colonies of gonococci. As the temperature remained elevated and her pelvic inflammation increased, she was referred to a surgeon, was operated upon, and recovered.

In both of these cases large amounts of blood (20-40 c. c.) were secured and were plated at once in glycerine agar or agar containing ascitic fluid. The writer lays stress upon three points in the technique of the examination of the blood for gonococci,—large amounts of blood, immediate plating and a low temperature for the medium. To secure the latter without solidification he uses a low percentage agar. He was not able to obtain a growth upon any medium but ascitic agar, or that containing

a large percentage of hæmoglobin, though attempts were made to cultivate the organisms in glycerine bouillon containing blood.

Heller has collected from the literature (mostly French theses) twenty-four cases of gonorrhœal phlebitis and reports a case of his own. The patient, thirty years old, had never had rheumatism or any heart lesion, and neither before nor after his phlebitis showed any evidence of varicose veins. He had lues six years before, but apparently had been cured, as no symptoms had appeared in the past three years. Two months after the onset of a severe attack of gonorrhœa with local complications, he developed a phlebitis of the left posterior saphenous vein and of the right pampiniform plexus. Complete cure resulted.

Of the twenty-five cases in the literature twenty (eighty per cent.) occurred in France, two in England and one each in Denmark, Belgium and Germany (the author's case). Nineteen occurred among males and six among females. All but two cases were in the third decade; of these two, one was thirty-four years old, and the other, a doubtful case, was seventy-five. The writer states that although the majority of cases of gonorrhœa occur at this age, yet cases later in life are so numerous that there is an apparent predisposition for gonorrhœal phlebitis in this decade despite the fact that varicose veins, which might be considered as a predisposing cause, are more frequent later. Most cases occur in the first attack of gonorrhœa—Voelker alone reports a case in the second attack—and usually in the subacute stage; the average being four and one-half weeks after the beginning of the attack; one case (Vidard's) was seen as early as the fourteenth day, and three cases are reported in which the time is given in months.

The phlebitis may occur with either simple or complicated gonorrhœa. Joint complications are frequent, and are mentioned in fifteen cases, the knee joint being the one most frequently noted (six times), the hip and ankle twice; polyarthritism occurred twice. Only two cases free from articular complications are mentioned. One case (Leroy's) had varicose veins, but never had had phlebitis. In a few cases unusual exertion was evidently an etiological factor. Syphilis is mentioned only in the author's case. In two cases there was a history of rheumatism.

The saphenous veins were most frequently involved, sixteen

cases; the femorals, six times; the humerals, four times; the superficial abdominal veins and those of the corpora cavernosa each three times; the iliacs, twice. Many cases showed a polyphlebitis. There were thirty-nine cases of phlebitis in the lower half of the body, of which twenty-six were in the lower extremities; and fifteen cases in the upper half of the body. Usually only a single venous system was involved, but in six cases more than one system was involved. In the twenty-five patients, forty-four veins showed phlebitis.

The clinical picture resembles that of phlebitis from any cause. Fever was noted in ten cases, in four irregularly over forty degrees. Chills were noted in one case, and a typhoid condition in one case. Gangrene of the skin was noted in one case (Batus and Perrine); this case was one of thrombosis of the corpora cavernosa, and gangrene of the skin of the penis resulted. Relapses were not uncommon.

Complete recovery resulted in sixteen cases (sixty-two per cent.) the average duration of the trouble being six weeks. Permanent blocking of the veins resulted in one case. In one amputation of the thigh was necessary for thrombosis of the popliteal and femoral veins. In one case death resulted from pulmonary embolism. Richet found in his fatal case numerous thrombi in the cavernous plexus and in the veins of the prostate and bladder; the latter were purulent. Caspar found at autopsy phlebitis of the plexus periprostaticus.

Werthheim states that he found the capillaries and smaller veins plugged with gonococci in some bladder mucosa removed *in vivo* in a case of gonorrhoeal cystitis in a nine-year-old girl, but these findings will hardly explain the cause of phlebitis of the larger veins noted. Heller states that in the cases with high fever, chills, etc., there is undoubtedly a mixed infection present, but those associated with arthritis, epididymitis, etc., are probably due merely to the gonococcus and its toxins. Cases which developed late in the course of gonorrhoea are probably due to the breaking into the circulation of a deep-seated focus of disease, with consequent liberation of gonococci into the blood stream.

The diagnosis generally offers no especial difficulties and the treatment is that usually employed for phlebitis arising from other causes.

Previous to the discovery of Neisser's diplococcus, certain

inflammatory affections of the oral mucosa had been observed that from purely clinical considerations were considered to be blenorrhagic in nature. Proof of the accuracy of this theory was first offered in 1891 by Rosinski in his work upon the stomatitis of the new born, and was confirmed by Leyden, Kast and others. In 1898 Jesionek reported the same condition to occur more rarely in adults.

Jurgens reports a case of this interesting affection, which occurred shortly after the patient had contracted gonorrhoea. He gives the following description of the appearance of the lesion: "Upon admission the gums appeared greatly reddened and swollen. This reddening was most intense at the edge of the gum which appeared as a dark red elevation raised two millimetres above the normal level. The gum was also much swollen between the teeth and was here covered with dirty grey-green foul smelling particles. The wiping off of this deposit or even slight disturbance of the gum caused bleeding to ensue. The most marked lesions were in the region of the upper incisor teeth, but in the neighborhood of the last two lower molars the gums and the opposing mucosa lining the cheek showed marked changes; the superficial epithelial layer was absent so that shallow irregular ulcers were present. This swelling of the mucosa increased in the following days to such a degree that the patient could open his mouth but a short distance. The secretion was intense. The general condition of the patient was only slightly disturbed, the temperature varied in the first two weeks between thirty-seven degrees and thirty-eight degrees and then remained normal. The lymph glands, especially on the right side of the neck, were somewhat swollen and tender to the touch.

Lotions of acetate of alum, potassium chlorate and potassium permanganate were of little value. Cracked ice gave the patient some relief. Weak solutions of bichloride of mercury 1:7000 to 1:10000 were most helpful in reducing the swelling and especially the tenderness and secretion. Recovery gradually took place and the patient left the hospital on the thirty-seventh day of his illness."

As points of clinical importance in differentiating this case from other forms of stomatitis, Jurgens says, "The diffuse intense inflammation of the gum and the mucosa lining the cheek, with the dirty grey deposit which was so easily wiped off, the great tendency to bleed, and no tendency to the formation of mem-

brane and ulcerations differentiated this affection from the common stomatitis without further consideration, especially as the teeth of the patient were in excellent condition."

The bacteriological findings were of interest. Smears from the exudate showed numerous spirochaetæ and motile fusiform bacilli. This finding of course suggested Vincent's angina, especially as these bacilli were present in large numbers. A considerable number of diplococci were also found, both intra- and extra-cellular, which had the morphological characters of gonococci. It was impossible to cultivate the spirochaetæ and fusiform bacilli, but other organisms were grown with ease. Diplococci with the well-known characters of gonococci were cultivated upon Werthheim's media, and also upon plain agar. This last fact is of course contrary to the usual evidence in favor of the positive identification of gonococci, but Jurgens points out that the work of Thalman, Urbahn, Wildbolz and Fr. Shanz demonstrates the fact that gonococci not only occasionally grow upon agar when of a certain degree of acidity, but also more rarely upon other media of the usual reaction. Various races differ from one another in this respect.

The evidence, however, offered by Jurgens in favor of the gonococcus being the causative factor in this case of stomatitis can hardly be considered conclusive. In association with the abundant bacilli, spirochaetæ, etc., which he states were present, the few diplococci can hardly be considered as being all important, particularly as a form of diplococci are normal inhabitants of this locality, and we must consider this case as being at least not proven.

CHARLES K. WINNE, JR.

January 1, 1905.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH — CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, MARCH, 1905.

Deaths.

	1901	1902	1903	1904	1905
Consumption.....	29	18	21	25	17
Typhoid fever.....	1	2	1	1	3
Scarlet fever.....	0	0	2	2	0
Whooping-cough.....	0	0	6	1	1
Diphtheria and croup.....	2	1	2	0	1
Grippe.....	11	1	6	5	4
Pneumonia.....	18	17	14	16	13
Broncho-pneumonia.....	9	1	4	6	8
Apoplexy.....	11	8	11	10	9
Bright's Disease.....	9	12	20	27	21
Cancers.....	9	11	6	4	7
Accidents and violence.....	6	6	6	4	11
Under one year.....	27	7	20	23	24
Seventy years and over....	21	22	39	53	32
Total deaths.....	164	120	175	212	161
Death rate.....	18.55	13.57	19.80	12.67	17.21
Death rate less non-resident	17.76	11.76	18.44	11.41	16.63

Deaths in Institutions.

	1902		1903		1904		1905	
	Resi- dent	Non resi- dent	Resi- dent	Non resi- dent	Resi- dent	Non resi- dent	Resi- dent	Non- resi- dent.
Albany City Hospital.....	4	6	11	5	11	6	7	8
Albany Orphan Asylum....	0	0	1	1	0	0	0	0
County House.....	2	2	2	2	7	0	0	0
Home for Aged.....	0	0	2	0	3	1	0	0
Homeopathic Hospital.....	0	0	3	0	2	1	3	0
Hospital for Incurables....	1	0	1	0	1	0	0	0
House of Good Shepherd..	0	0	0	0	0	0	0	0
Little Sisters of the Poor..	1	0	2	0	3	1	4	0
Public Places.....	2	2	1	1	0	0	1	0
St. Margaret's House.....	1	0	0	0	1	0	0	2
St. Peter's Hospital.....	4	2	4	1	5	1	7	2
St. Vincent's Female Or- phan Asylum.....	0	0	0	0	1	0	0	0

Births at term.....	110
Still births.....	4
Premature births.....	5
Total.....	119
Marriages.....	30

INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation, there were one hundred and ninety-eight inspections made, of which one hundred and forty-five were of old buildings and fifty-three of new buildings. Twenty-nine iron drains were inspected, twenty connections with street sewers, twenty-two tile drains, seventeen cesspools, fifty wash basins, fifty-seven sinks, thirty-nine bath tubs, thirty-three wash trays, butler's pantry sinks, ninety-nine tank closets, and ninety permits were issued, for plumbing purposes and twenty-seven for building purposes. Twenty-three plans were submitted of new buildings, six houses were tested on complaint with peppermint test, six water tests were made. Eleven houses were examined on complaint and twenty-six reinspections were made, and thirty-three complaints were found valid and seventeen were found to have been made without cause.

In the Bureau of Nuisances, there were thirty-six complaints made, of which four were made of privies, six of closets, one of drains, four of plumbing, two of water, six of filthy yards, two of filthy cellars, two of filthy premises, three of gas, none of chickens, none of dead animals, none of stagnant water and two unclassified. There were thirty-eight inspections made and thirty reinspections, and twenty-two notices were served.

Eighty-one inspections were made of mercantile establishments and ten mercantile certificates were issued to children between fourteen and sixteen years of age.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1901	1902	1903	1904	1905
Typhoid fever.....	9	5	5	12	4
Scarlet fever.....	7	11	13	29	7
Diphtheria and croup.....	56	8	11	13	2
Chickenpox.....	6	8	11	6	10
Measles.....	38	11	22	32	454
Whooping-cough.....	0	0	0	0	0
Consumption.....	1	4	4	0	3
Totals.....	117	47	66	92	480

Number of days quarantine for diphtheria:

Longest..... 10 Shortest..... 10 Average..... 10

Number of days quarantine for scarlet fever:

Longest..... 38 Shortest..... 26 Average..... 30

Fumigations: Houses..... 9 Rooms..... 17

ANTITOXIN.

Cases of diphtheria in which antitoxin was used..... 2

Cases of diphtheria in which antitoxin was not used..... 0

Deaths from diphtheria after use of antitoxin..... 0

There were no deaths from diphtheria.

BENDER LABORATORY REPORT.

	1902	1903	1904	1905
Initial positive.....	9	8	10	3
Initial negative.....	26	32	46	17
Release positive.....	22	30	14	5
Release negative.....	19	28	21	0
Tubes spoiled.....	0	1	0	..
Totals.....	76	99	91	25

Cultures for Tuberculosis.

Initial positive.....	2
Initial negative.....	3

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A regular meeting of the Medical Society of the County of Albany was held in Alumni Hall, Wednesday evening, March 8, 1905. The meeting was called to order by the President at 8:40 P. M. There were present, Drs. Ball, Bedell, Boyd, Curtis, Classen, Goewey, Gutmann, Holding, Jenkins, Laird, Lempe, Lomax, Macdonald, MacFarlane, MacHarg, McKenna, Moore, C. H., Moston, Munson, Myers, Pease, Pearce, Rooney, Ryan, Traver, Vander Veer, A., Vander Veer, J. N., Ward, Winne, L. B.

Dr. WARD moved that the minutes of the previous meeting be approved as printed in the ANNALS. Seconded. Carried.

Dr. WARD read his paper on "Surgery of Twenty-five Years Ago."

Dr. TRAVER read his paper on "The Diagnosis of Acute Intestinal Obstruction."

Dr. LIPES, who, with Dr. STANTON was to read, and who were both unavoidably detained, had their papers put over until the next meeting.

Dr. ALBERT VANDER VEER read his paper on "The Evolution of Surgery During the Past Twenty-five Years."

Dr. MACDONALD, who was asked by the President to open the discussion, said in part as follows: that he was not entirely able to concur in the felicitations of Dr. Ward over the progress achieved in surgery in the past quarter of a century; that he felt that we had lost in some ways as much as we had gained. Above all things we see less and less of the remarkable dexterity and precision combined with rapidity which were possessed by the surgeons of the preanesthetic days. He had a striking recollection of one of the incidents of his student days, and in which Dr. Ward acted the chief part. Dr. Ward had at that time given up the practice of surgery and was teaching medicine in the college. One day, when he was lecturing to his class on typhoid fever, there came a call

from the hospital for a surgeon to operate on a man injured in a railroad accident. All the attending surgeons being out of town or out of call, Dr. Ward dismissed his class and went to the hospital, where he did an amputation through the lower third of the thigh, and without the use of the antiseptic spray. The healings of the wound was *per primam*. The reason, he thought, why the old surgeons got such good results without the aid of antisepsis or asepsis was that they did very little traumatism to the tissues and through their rapid operations the wounds had a minimal exposure to infection. Dr. Ward well illustrated the necessity for manual dexterity in the practice of surgery possessed by the late Dr. Alden March in so high degree. Many surgeons seem to entirely disregard the finer histology of tissue, while he has seen others who err in the opposite direction, making their dissections unnecessarily tedious and prolonging the time under anesthesia. The question of ligatures was a mooted one. Many men used absorbable sutures entirely, while others used silk exclusively. Of these last, Kocher was preeminent. In his remarkable operation for goitre he sometimes used as many as one hundred silk ligatures. He said that while it was safe for him to do it, it was not safe for everybody. He (Dr. Macdonald) said that there would never be a greater surgeon in the world than Sir Astley Cooper; there would never be an American surgeon greater than Willard Parker, nor could Albany ever expect to see the peer of Alden March. Kronlein was the first to extirpate the vermiform appendix. Dr. Henry B. Sands, of New York, was, however, the first to carefully plan and carry out an operation for appendicitis.

He remembered when he was accustomed to get up at four in the morning to fetch water from the neighboring cisterns and start the spray before the operation. At that time and under those conditions the operation of ovariectomy had a mortality of approximately 25 per cent. Then came the use of iodoform as a means of combating and preventing infection. Dr. Tait was the first to demonstrate that common tap water was the best thing with which to wash out the abdomen. Considering the immense advances of the past who could predict the future? He, however, felt the spirit of prophecy strong upon him and ventured the assertion that the year 2000 would see the abolition of all departments of medicine and that all ills would be amenable to surgery. We now attacked the heart with success and who could say that then we would not be able to scrape vegetations off the mitral valve. And above all he felt that tuberculosis of the lungs, that scourge of humanity, would be amenable to surgery in the near future, and cured, owing to the development of the air chamber as applied to thoracic surgery.

Dr. PEARCE said that he felt that enough credit had not been given, perhaps, to the laboratory workers, who by their experimental work upon animals had made so much of intestinal surgery possible.

Dr. WARD said that he felt that Dr. Macdonald was an optimist and inclined to take entirely too rosy a view of the prospect of surgery completely displacing medicine. Concerning Dr. Sand's first operation for appendicitis he remembered Dr. Sands telling him that he had watched the patient through two or three attacks of appendicitis before he oper-

ated on him. The result emphasized the importance of manual dexterity in surgeons, which was sadly in abeyance in the present generation. This happened in or before the year 1876. Sands certainly deserves and should receive the credit for being the first to plan and execute the operation for appendicitis.

Dr. ALBERT VANDER VEER said that he thought that while Dr. Macdonald might have claimed too much, still he felt he was justified in his remarks concerning the surgery of the heart. Concerning operations about the right side of the belly, he remembered a case on which Dr. March had operated many years ago. The case was that of a railroad man who had been injured by the cars. He was only a boy at the time, but he remembered hearing it said that the amputation of the thigh was done in twenty-three seconds! It was marvelous to note the ease with which Dr. March could operate with either hand. Concerning the dangers of opening the peritoneum, he remembered another case where Dr. March undertook to remove a tumor of the right flank, which he thought to be extraperitoneal. After putting on an old coat, the sleeves of which were stained with the pus and blood of former operations, he, with the assistance of Dr. Armsby, attacked the growth. Carefully proceeding, he was warned by Dr. Armsby of the nearness of the peritoneum, but the words were hardly out of Dr. Armsby's mouth before the peritoneum was perforated. The incision was then closed without completing the removal and the man of course died in a few days from peritonitis. He said that he felt the necessity for the development of rapidity in operating. He was glad to have lived in the time in which the profession had made so many and momentous advances. He said that he could not see how there could be any such marvelous changes made in the future in the same period of time.

On motion the society adjourned.

JAMES P. BOYD, *President*.

JAMES F. ROONEY, *Secretary*.

Medical News

Edited by Eugene E. Hinman, M. D.

ALBANY MEDICAL COLLEGE ALUMNI ASSOCIATION OF NEW ENGLAND.—Dr. A. H. Hoadley has been chosen treasurer of this association, and is completing a list of graduates in New England who are eligible to membership. He may be addressed at 106 Main street, Northampton, Mass.

ST. PETER'S HOSPITAL, ALBANY.—This hospital has recently purchased the adjoining property on Broadway, with the purpose of erecting a house for nurses, and of arranging an airing yard for patients. The work on the old hospital building has been completed and gives practically a new building, modern in every respect of construction and equipment.

The main entrance to the hospital on Broadway is a work of art in granite and marble. A broad and deep vestibule or lobby is reached by a flight of several stone steps, which is flanked on either side by two large granite pillars. Swinging doors admit one to an inner lobby similar in

construction to the vestibule. The floors are of tewezzo and the walls have a marble wainscoting to the top of the doors, the upper portion of the walls as well as the ceiling being of a delicate sea green.

From the outer lobby one enters, by a door at the right, the dispensary. There is a commodious waiting room provided with attractive as well as comfortable wooden benches. In front of this room are two apartments used by the dispensary specialists for examinations and consultations. At the rear of the waiting room is the drug department.

At the left is the office, a small room provided with all that is necessary for keeping the accounts of the institution. Adjoining this is a large reception room, with a wainscoting of dark oak and walls of dark red. Mission furniture in black oak and some Oriental rugs render the general appearance particularly rich. At the rear and communicating with the reception room as well as with the lobby is the room of the Superior, Mother Philomena. This also is provided with mission furniture. On this floor is the amphitheatre, now used for clinics, but eventually intended for use as an emergency operating room. The whole room is perfectly white in tile and artificial stone. The tiers of raised seats have the appearance of being composed of a single piece, no crack or crevice where dust might collect being seen. There is a special entrance to this room from North Ferry street, intended for the use of the students who attend the clinics. The ambulance hospital entrance is also on the North Ferry street side of the building.

At the rear of the main floor are the men's wards, provided with solariums.

In the front or original portion of the building there are on the second floor a number of private rooms communicating with a waiting room. These rooms have all been furnished by individuals, the doors bearing bronze tablets of the names of the givers.

Close at hand is a large room which is used as a store room for clothing. A number of private rooms are in the eastern portion of the building on this floor. On the third floor are six other private rooms.

The operating room is on the upper floor of the building. The patient is taken from the elevator into the etherizing room adjoining.

Here as elsewhere throughout the institution everything has been done to attain as nearly as possible the height of perfection made possible by recent discoveries in sanitary science. The furnishings are all in white enameled metal. The clothing worn by physicians and nurses during operations are kept in bundles in air-tight closets. The surgical instruments are kept in cabinets of a similar nature.

As a whole the building is a credit to the city. The work of the institution is increasing to such an extent that the strength of the resident physicians is being taxed, rendering an addition to the number of internes desirable.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—STATISTICS FOR MARCH, 1905.—Number of new cases, 99, classified as follows: Dispensary patients receiving home care, 1; district cases reported by health physicians, 9; charity cases reported by other physicians, 39; patients of limited means, 41; old cases still under treatment, 40; total number

of patients still under nursing care, 130. *Classification of diseases (new cases)*: medical, 28; surgical, 5; gynæcological, 8; obstetrical, 20 mothers and 18 infants under professional care; eye and ear, 1. Two contagious diseases in medical list; deaths, 8.

Special Obstetrical Department: Number of obstetricians in charge of cases, 3; attending obstetricians, 2; medical students in attendance, 4; guild nurses, 6; cases, 8; number of visits by head obstetrician, 2; by attending obstetricians, 10; by the medical students, 38; by the guild nurses, 60; total number of visits for this department, 120.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,054; for professional supervision of convalescents, 201; total number of visits for this department, 1,255. Six graduate nurses and five assistant nurses were on duty. Cases were reported to the guild by three of the health physicians and by 33 other physicians.

THE AMERICAN JOURNAL OF SURGERY.—Dr. Joseph MacDonald, Jr., who has been identified with the *International Journal of Surgery*, announces that he has severed his connection as manager and managing editor for the purpose of publishing an independent *practical* surgical journal under absolute *professional* control and along such lines as will best serve the interests of the general practitioner. He has purchased all rights in the *American Journal of Surgery and Gynecology*, and with the April number this journal, thoroughly modernized and largely increased in circulation, is issued from New York as the *American Journal of Surgery*.

This journal is to have the co-operation and support of Robt. T. Morris, Professor of Surgery, New York Post Graduate School; Howard Lilienthal, Visiting Surgeon, Mt. Sinai Hospital, New York; J. P. Tuttle, Professor Rectal Diseases, New York Polyclinic; Jas. T. McKernan, Professor Nose and Throat, New York Post Graduate School; Sam'l G. Gant, Professor Rectal Diseases, New York Post Graduate School; Augustin H. Goelet, Professor Gynecology, New York Clinical School of Medicine; C. Wendell Phillips, Professor Diseases of the Ear, New York Post Graduate School; Ferdinand C. Valentine, New York.

THE AMERICAN THERAPEUTIC SOCIETY.—The sixth annual meeting will be held at the Hotel Bellevue-Stratford, Philadelphia, Pa., May 4th, 5th and 6th, 1905. The following list of papers to be presented has been issued: The Effects of Intravenous Injections of Ergot on the Mammalian Circulation, Torald Sollman and E. D. Brown, Cleveland, O.; The Proper Sphere of Bromides in Epilepsy, Frederick Peterson, New York city; The Radiation Treatment of Tuberculosis Glands, William J. Morton, New York city; The Prevention and Treatment of Uræmia in Acute Nephritis, Howard Van Rensselaer, Albany, N. Y.; The Management of Chronic Parenchymatous and Chronic Interstitial Nephritis, Solomon Solis-Cohen, Philadelphia, Pa.; The Remedial Value of Hypnotic Cumulative Action, George F. Butler, Chicago, Ill.; Medical Treatment of Serous Effusions, Thomas L. Coley, Philadelphia, Pa.; The Treatment of Chronic Nasal Catarrh with Sulphur, Louis Kolopinski, Washington, D. C.; The Value of Physiological Salt Solution in Circulatory Failure, H. C. Wood, Jr., Philadelphia, Pa.; Clinical Experiences

with Certain Drugs in Heart Disease, Thomas E. Satterthwaite, New York city; Exhibition of Several Cases of Skin Disease, John V. Shoemaker, Philadelphia, Pa.; The Recognition and Treatment of Cholecystitis, Robert T. Morris, New York city; The Treatment of Intestinal Indigestion, George B. Fowler, New York city; The Treatment of Chronic Diarrhœa, Reynold Webb Wilcox, New York city; Rectal Alimentation, William H. Porter, New York city; *Symposium on Special Therapeutics*: The Etiology and Treatment of Infantile Atrophy, John Blake White, New York city; Notes on the Treatment of Hay Fever and Asthma, Charles H. Knight, New York city; Drug Adulterations, Harvey W. Wiley, New York city; The Prophylaxis of Pneumonia, James M. Anders, Philadelphia, Pa.; The Recognition and Treatment of Pancreatic Inflammations, Carl Beck, New York city; The Management of Injuries to the Knee-joint, DeForest Willard, Philadelphia, Pa.; The Treatment of Neuritis, Daniel R. Brower, Chicago, Ill.; The Value of the Correction of Errors of Refraction in Psychoses, Edward D. Fisher, New York city; The Management of Dysmenorrhœa, Egbert H. Grandin, New York city; The Treatment of Incontinence of Urine in Children, Noble P. Barnes, Washington, D. C.

THE FIFTEENTH INTERNATIONAL MEDICAL CONGRESS will be held at Lisbon in April, 1906. The executive committee consists of Frank Billings, M. D., William Osler, M. D., Frederick Shattuck, M. D., Abram Jacobi, M. D., and J. H. Musser, M. D., chairman. Any communications regarding the presentation of papers at this congress can be sent to Miguel Bombarda, secretary, at Lisbon, or to Dr. Ramon Guiteras, secretary for this country, 78 West 55th street, New York city.

PERSONAL.—DR. WILLIAM G. KEENS (A. M. C., 1904) is in practice at 85 West street, Albany, N. Y.

—DR. ARTHUR F. HOLDING (A. M. C., 1901), formerly of New York city is in practice at 9 Ten Broeck street, Albany. Dr. Holding has been appointed by the governors of the Albany Hospital in charge of the X-ray apparatus of the hospital.

DIED.—At Troy, N. Y., March 20, 1905, DR. WILLIAM N. BONESTEEL (A. M. C. 1863.)

IN MEMORIAM

ISAAC C. EDSON, M. D.

Dr. Isaac C. Edson died at his home in Windsor, N. Y., February 23, 1905. Dr. Edson was a man of influence and strength in the community and left a deep and sincere feeling of regret and loss upon his death. His life is sketched as follows in the local paper, the *Windsor Standard*:

"Isaac C. Edson was born in the town of Windsor on July 3, 1823, and was a son of Harley and Phœbe Heath Edson. His father was a farmer and Isaac's school advantages were made up of a few weeks each winter in a log school-house until he reached fourteen years. His father dying before the lad attained his majority, the care of his mother and two younger-children fell upon him. He did not shirk this responsibility, and his

after life proved that he never shirked anything. He took up the carpenter's trade and followed it quite successfully for several years until he became imbued with a desire to learn something about medicine. This study and dependent educational branches he pursued evenings, and so quietly that his most intimate acquaintances were not cognizant of his nightly quest of knowledge. His private studies covered a period of several years, until finally a neighbor fell hard sick. No regular practitioner being immediately available, the young man volunteered his services, was accepted and saved the neighbor from an untimely grave. This success brought him a little local fame, and soon he had another 'call,' which he treated with similar skill. The demand for his medical services grew. But he did not discontinue his studies; in fact he never gave up study, and within the past two years, even since retirement from active work, he was diligently reading and keeping abreast of the times in most approved methods and medicines for healing the sick. Needless to say that he was a believer in eternal progress, and never grew 'rusty' in his profession; that his counsels were wise because of the knowledge he accumulated before giving advice; that he touched the keynote of success only by conscientious studiousness and intelligent application of the knowledge thereby gained.

"Several years elapsed before young Edson abandoned the carpenter's trade and resorted to medicine. Even then he would not consider himself a thoroughly competent physician until he had completed a college course. Accordingly he entered the Pennsylvania Medical College at Philadelphia and was graduated from that institution in 1861. Renewing his college studies, he was graduated from the Albany Medical College in 1868. In the late seventies he pursued a course of lectures in the New York Polyclinic College. Dr. Edson passed the civil service examination and was at the head of the Windsor board of health for many years. He was a member, and twice president of the Broome County Medical Society, and was a member of the New York State Medical Society. When he regularly commenced the practice of medicine he located at Cincinnatus, N. Y., where he remained for a year, then locating at West Colesville for three years. He returned to Windsor, where he remained in continuous practice, for the last decade being the oldest practicing physician in Broome county, always highly esteemed and his opinions valued among his professional brethren.

"Dr. Edson was active in town and county affairs, taking keen interest in public matters and the promotion of good citizenship. His ability was recognized and he twice served Windsor as supervisor, the county twice as coroner, the State twice as member of assembly, and the State again as examiner in lunacy. His straightforward integrity and earnest thought for the welfare of his constituency made him a valuable public official.

"September 25, 1841, he married Lydia N., daughter of Platt and Polly Crofut. They had two children. He married second, Sarah, daughter of Gurdon and Laurie Knowlton. The death of their daughter Ella at the threshold of womanhood bore heavily upon the doctor and his good wife.

"Dr. Edson never lacked for professional business, and by careful attention to it and by shrewd investments he acquired a considerable portion of this world's goods—many times more than the average country physician accumulates. He was a careful collector, and it is a fact that at the time of closing up his active labor less than one hundred dollars were outstanding on his books. But it should not be understood that he was severe in making collections—he was very liberal. Many a poor family has benefited by his skill and had no doctor's bill to pay. To the discouraged and hard-working father he has often said, 'Well, how much can you pay and pay it?' And when a sum was named it was accepted and receipt given in full. He was kind and benevolent to the industrious but unfortunate.

"Three years ago the doctor conceived the idea of bestowing some enduring benefaction upon the town of Windsor, not to foster his own name, but to benefit and make happier the people among whom he had dwelt so long. 'The people of Windsor have been ever kind and loyal to me, perhaps more so than I have deserved; and I desire to thank them in a practical way,' he said. His thanks took the form of \$4,600, which went into the superstructure of the splendid town hall. As soon as the gift was made, with characteristic modesty he refrained even from making suggestions and left the whole matter in the hands of a building committee. Similarly it may be mentioned that no less than four of Windsor's churches are remembered in his testamentary bequests, and more than one deserving family is noticed by legacy in a way that will do much good at a needed time.

"'I am in no hurry to leave this world,' he said to the editor not long ago; 'it is the world I know most about and I have enjoyed living in it. I have tried to be of good, and surely living has done me good. But I am old, and spiritually and materially ready, I feel that I am prepared to die.' Not a word about the struggles and vicissitudes and disappointments which we know he experienced as all men must. Merely a review of eighty years' life expressed in thought which covers the whole sum of human happiness. What a glorious sunset!"

P. THOMAS MARKEY, M. D.

Dr. P. Thomas Markey died suddenly, February 22, 1905, at his home in Schenectady, of gastritis after an illness of one week. Dr. Markey was in his thirty-fourth year and was born in Schenectady in 1871. He was the son of Mr. and the late Mrs. Thomas Markey and received his education in the public schools and the Union Classical Institute, from which institution he graduated with the class of 1890. He then took up the study of medicine and graduated from the Albany Medical College with the class of 1893. He began practice in Schenectady, and enjoyed a large practice. He was married in 1900 to Miss Rose B. Barrett by whom he is survived. He is also survived by his father and one sister Mrs. Frank V. DeForest, Jr. Dr. Markey was a member of the A. Z. fraternity of the Union Classical Institute, the Phi Sigma Kappa Society, and the Schenectady County Medical Society. Ill health caused him to give up active practice and he accepted a position as superintendent of the Combs Sanatorium on Long Island. Later he sought the Adiron-

dacks and practiced his profession at St. Regis Falls. In 1897 he returned to Schenectady and was successful. He was noted for his genial qualities and had many friends who regret his death.

FRED. SAUERBRIE, M. D.

Dr. Fred. Sauerbrie died very suddenly and unexpectedly, at his home at Clarksville, N. Y., April 2, 1905. He was born in Germany, 38 years ago, and graduated from the Albany Medical College, April 16, 1895. He had acquired a large practice and was very successful in his chosen profession. Always of a genial disposition, he was highly thought of by his classmates and teachers in college. "None knew him but to love him." His demise, at so early an age, in the midst of his great usefulness, is truly sad, and will be greatly regretted by all who knew him, especially by those among whom he always resided and to whom he later ministered in sickness and trouble.

C L. MYERS.

GEORGE E. BULLARD, M. D.

Dr. George E. Bullard, of the class of 1853, Albany Medical College, died at his home in Blackstone, Mass., on March 25, 1905. Dr. Bullard began practice in Niagara, N. Y., but as the climate did not agree with him, he left there and later located in Blackstone, Mass., where he married in 1855. The town honored him with many positions of trust. He was medical examiner of the South Division of Worcester county for nearly two terms, ill health causing him to resign before the completion of his second term, and for a number years was chairman of the board of selectmen and board of health. After a long and successful practice he retired in 1898. Three married daughters survive him.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Saunders' Question Compends. Essentials of Nervous Diseases and Insanity: their Symptoms and Treatment. By JOHN C. SHAW, M. D., late Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School. Fourth Edition, thoroughly revised. By SMITH ELY JELLIFFE, Ph. G., M. D., Clinical Assistant, Columbia University, Department of Neurology; Visiting Neurologist, City Hospital, New York. 12mo volume of 196 pages, fully illustrated. Philadelphia, New York. London: W. B. SAUNDERS & COMPANY, 1904. Cloth, \$1.00 net.

The existence of these manuals may be largely attributed to a system of medical instruction which prepares students to pass examinations. The fault lies rather with medical colleges than with publishers and authors. It is to be hoped that in the not distant future medicine may be studied as a science with broad foundations and logical reasoning, and not as a heterogeneous mass of disconnected facts to be stored up in the minds of practitioners, for use as occasion demands. When this time comes "Essentials" and "Compends" will no longer find a market.

Dr. Shaw's book, revised by Dr. Jelliffe, is a good representative of its class. Genius is required for the condensation of a large subject into short epigrammatic paragraphs, and this has been well done. And still it is inconceivable that an intelligent idea of insanity can be derived from forty-three duodecimo pages, the number allotted to this subject.

A Compend of the Diseases of the Eye and Refraction. By GEORGE M. GOULD, A. M., M. D., and WALTER L. PYLE, A. M., M. D. Third Edition. P. Blakiston's Son & Co., Philadelphia.

Published in the usual form of all of Blakiston's compends this is an admirable work by these two well-known authors.

To give a brief but comprehensive review of the numerous eye diseases is an exceedingly difficult task but one that has been accomplished in this book. Although the anatomy receives little attention, except by charts, the student can readily understand the structure of the eye and appendages. Refraction, including Retinoscopy, by Dr. Thorington, is given much space and is very clearly expressed.

The description of ocular diseases is commendably pointed and brief.

The last two pages are devoted to a review of the latest drugs in ophthalmology. Numerous illustrations aid in making the book one that can be fully recommended to all who want a small work on the eye.

A. J. BEDELL.

PATHOLOGY AND BACTERIOLOGY

Edited by Richard Mills Pearce, M. D.

Assisted by E. MacD. Stanton, M. D. and Charles K. Winne, Jr., M. D.

Experimental Arthritis and Endocarditis Produced by a Streptococcus Isolated from the Blood of a Case of Rheumatism, Endocarditis and Chorea.

MORRIS J. LEWIS AND WINFIELD T. LONGSCOPE. *American Journal of Medical Sciences*, Vol. CXXVIII, p. 601, October, 1904.

The clinical picture of rheumatic fever, especially when complicated by endocarditis, closely resembles that of diseases of known bacterial origin. For this reason many investigations have been carried out with the hope of isolating organisms which could be proved to be the specific etiological factor in the causation of this disease. Various organisms have been occasionally isolated, such as streptococci, staphylococci and various bacilli. Among the latter some were of the colon type, and Achalmé has described a spore-bearing anærobic bacillus, which later work tends to show in the *B. ærogonas capsulatus*. Though most of the early work was in great part confusing and oftentimes contradictory, some recent investigations, especially in Germany and England are more satisfactory.

Lewis and Longscope review the results of earlier investigations and report interesting findings of their own. From the blood current of a fatal case of rheumatism, endocarditis and chorea, they isolated a delicate streptococcus which could not be distinguished culturally from the ordinary varieties of streptococcus pyogenes. Experiments upon rabbits injected intravenously with this organism were, however, most striking. Five rabbits thus injected developed polyarthritis, and from the in-

volved joints in each case a streptococcus was isolated, which was identical in all respects with that obtained from the original blood culture. Rabbits three, four and five were injected successively with the organism obtained from the previous rabbit. The joint lesions developed only after a period of incubation varying from four to nine days; previous to this time the animals appeared perfectly well. The arthritis was fatal in but one case, which also showed an extensive vegetative endocarditis. From the vegetation in this case, from the heart's blood, and from all the organs as well as the joints, the streptococcus was isolated in pure culture. From no location in the other rabbits was the organism isolated except from the joints involved. This organism was capable of producing formic acid in alkaline bouillon, which, when produced in large amounts, Walker believes, is a characteristic peculiar to the "*Micrococcus rheumaticus*." This writer also states that formic acid can be found in the urine of patients with rheumatic fever.

Lewis and Longcope point out that though occasionally intravenous injections of streptococci from other sources than the blood or joints of rheumatic patients cause mono- or polyarthritis, and even much more rarely endocarditis, yet the arthritic involvement in experimental animals injected with the streptococcus of rheumatism is almost constant, and the lesions of the heart valves and serous membranes not at all infrequent. They also state that it is usually considered impossible to isolate a streptococcus from the blood stream or synovial fluid of any but fatal cases of rheumatism, and point out the possibility of a streptococcus infection, supervening as a terminal event in the cases of this disease which end by death.

In conclusion, they regard the organism isolated by them to be the same as that described by Wasserman, Meyer, Poynton and Paine, and Walker and considered at least by the last three observers to be the specific cause of rheumatic fever.

The "Micrococcus Rheumaticus ; " Its Cultural and Other Characters.

JAMES M. BEATTIE. *British Medical Journal*, No. 2292, December 3, 1904, p. 1510.

Beattie describes in some detail the cultural and morphological characteristics of the organism isolated by him from the knee joint of a fatal case of acute articular rheumatism. The results of the animal inoculations with this organism he has previously reported, having produced arthritis and endocarditis and claiming to have also produced chorea. (*Jour. of Path. and Bact.*, March, 1904.)

He compares the cultural features of his organism with one isolated by Paine from a case of rheumatism, and with ordinary streptococci (*Streptococcus pyogenes*). The only difference between his and Paine's coccus was a more rapid and complete coagulation of milk with the latter, particularly in milk bouillon. In regard to the comparison of the growth of the "*Micrococcus rheumaticus*" with that of the streptococcus he says, "The growth on gelatin appears earlier, and is more abundant in the micrococcus rheumaticus. Its more abundant and earlier growth on ordinary agar at twenty degrees centigrade than at thirty-seven degrees centigrade is quite unlike what is seen with the streptococci.

The very marked acid production in bouillon and in milk, the early coagulation of the milk, and the length of time the organism lives in suitable culture media, are features which distinguish it absolutely from the streptococcus."

The morphological features are as follows: "The organism is a small micrococcus which occurs in the tissues and in cultures in pairs or in short chains. Grown in milk bouillon the chains are more definite, but I have never seen chains containing more than a dozen organisms. In size it is smaller than the ordinary streptococcus, and I have never been able to produce in any media the long chains which one so constantly finds in cultures of the *Streptococcus pyogenes*. Many of the organisms, especially those seen in pairs, are rather oval in shape, and more resemble the pneumococcus than the streptococcus. No capsule could be demonstrated. Degeneration forms are fairly common, the coccus becoming swollen and elongated, but even in cultures of several days' growth the infrequency of degeneration forms as compared with those in a growth of *Streptococcus pyogenes* of a similar period is a very striking feature."

Based on these features he claims his coccus is a special organism, is not an ordinary streptococcus, and is causal in acute rheumatism.

His conclusions are: "A coccus can be isolated from cases of typical acute rheumatism, which can be grown outside the body, there showing characters which are in some respects specific; in inoculation in animals it produces a combination of lesions which are similar to those of acute rheumatism in the human subject, sometimes specially affecting the joints, sometimes specially the heart, sometimes producing chorea, sometimes producing a combination of these conditions, and that from these lesions the organism can be recovered in pure culture."

Experimental Streptococcus Arthritis in Relation to the Etiology of Acute Articular Rheumatism.

RUFUS I. COLE. *Journal of Infectious Diseases*, Vol. I, p. 714, November, 1904.

Cole states that the following theories as to the etiology of acute articular rheumatism are held by those who believe in its bacterial origin.

1. That it is due to a specific micro-organism, as yet undiscovered.
2. That it is due to various pyogenic cocci, mainly the ordinary streptococci; that is a mild form of pyæmia.
3. That it is due to a specific streptococcus or diplococcus.
4. That it is due to a specific bacillus—*Bacillus* of Achalmé.

There is little evidence in support of the last view; the second and third views have the most advocates. In his work Cole has attempted to ascertain what, if any, value was attached to these two theories, particularly that one which assumes a specific coccus as the cause of this disease.

Various workers have isolated from the joints, urine, inflammatory exudates or blood current of patients suffering with acute articular rheumatism, streptococci or diplococci. On injecting cultures of these organisms into the circulation of rabbits they have obtained with some

varying regularity, multiple arthritis, and endocarditis or pericarditis Meyer has cultivated from the throats of rheumatic patients suffering with angina, a streptococcus, which, also upon injection into rabbits has produced arthritis and endocarditis. In a few cases a condition resembling chorea has been produced, particularly by Beattie.

Cole mentions the possibility that these streptococci were in the first instance a contamination or that their presence might be due to a secondary infection, and in the second instance that they were the organisms normally present in the throats of a certain percentage of individuals. In the Johns Hopkins Hospital for the past three years, routine cultures have been made from the blood of practically all cases of acute articular rheumatism, and from the joints of all such cases showing any articular effusion. No organisms have so far been isolated from any case. Similar negative results have been reported from other clinics by Philip and others.

The claim of specificity for the cocci hitherto isolated rests almost entirely upon their supposedly characteristic effects when injected into rabbits. Their cultural features are not sufficiently variable from those of the ordinary *Streptococcus pyogenes* to establish them as a new species.

In order to test this so-called specificity of the "*Diplococcus rheumaticus*" to produce arthritis, endocarditis, etc. Cole has performed numerous injection experiments with streptococci isolated from sources other than cases of clinically acute articular rheumatism. These sources were as follows: Peritonitis following carcinoma of the stomach; puerperal fever, autopsy; blood during life in a case of terminal septicæmia accompanying myocarditis; empyæma; blood during life in septicæmia following acute appendicitis; scarlet fever adenitis; besides one case of septicæmia and acute endocarditis in a man who said he had had "rheumatic pains in his joints" for a year or more, though no definite history of acute rheumatic fever could be obtained, and no definite signs of arthritis could be made out. The diversity in the sources of these races of organisms rendered it impossible that they all could have had any association with rheumatism, and hence could not all have been the so-called "*Diplococcus rheumaticus*."

Cole's results showed no essential difference between the several races studied nor between these organisms and those considered by some writers as the specific source of rheumatism. He was able to produce mild grades of arthritis with all seven races studied, when they were injected in amounts insufficient to cause death of the animals within six or seven days. The only difference between his organisms was in the grade of virulence. Even in the case of the most virulent organisms, causing death in from twenty to forty-eight hours, streptococci could be isolated from the joints showing no evidence of inflammation, and before any definite lesions could be detected elsewhere in the body. Similarly the streptococci could be found in the joints when they had disappeared from other parts of the body.

The arthritis is usually mild and tends to recovery. This is well shown in one rabbit, in which for four months arthritis was repeatedly induced and which as frequently recovered. The condition may often be over-

looked clinically unless particularly looked for, as the swelling is obscured by the skin and fur, and a rabbit with arthritis tends to crouch in the corner of his cage, and does not attempt to hop about, and thus display his lameness. To this factor Cole attributes in part the fact that arthritis has been generally overlooked in experimental streptococcal infections. Then too, such work is done usually with the idea of testing the virulence of an organism, determined by the rapidity with which an animal might be killed with a given dose, while a longer duration of the infection is necessary for the development of an arthritis.

In two of the rabbits Cole was able to produce a true endocarditis; in both cases the mitral valve was the one affected and the involvement consisted in minute vegetations along the edge of closure. Two rabbits showed in-coordinate convulsive movements before death, similar to those described as chorea in rabbits, but Cole does not in the least claim this diagnosis for the condition present.

The organisms studied grew in typical chains upon artificial media, particularly bouillon and milk, but when occurring in the joints and internal organs, they almost never occurred in this form; here they were more often found as diplococci or as short chains composed of a few diplococci. It may be that this fact is responsible for the so-called organisms of rheumatism having been sometimes called a streptococcus and at other times a diplococcus.

Cole concludes as follows:

Arthritis and endocarditis may be produced by the intravenous inoculation of rabbits with streptococci from various sources, and the results obtained are quite similar to those described as resulting from the inoculation of the so-called "Micrococcus or Diplococcus rheumaticus."

Therefore the description of a distinct variety or species of streptococci based on this property of causing endocarditis and arthritis is unwarranted. Whether the evidence is sufficient that acute rheumatic fever is simply a form of streptococcus septicaemia it is not intended to discuss.

Flies and Tuberculosis.

F. T. LORD. *Boston Medical and Surgical Journal*, Vol. CLI, p. 65, December, 1904.

In a very convincing, but simple manner, Lord has demonstrated the danger of allowing flies free access to tuberculus material.

Flies were confined in glass jars in which was also sputum containing about ten tubercle bacilli to a microscopic field. The majority of the flies died within three days, but as control flies also died in an equal period of time, their death was not due to the tubercle bacilli. Paraffine sections were made of many of the flies, and tubercle bacilli were found in the intestinal contents of all. No invasion of other parts of the body could be determined.

Fly specks deposited upon clean slides placed in the cage showed the presence of tubercle bacilli within eighteen hours after the ingestion of the sputum. The number of bacilli in each microscopic field had increased from ten in the original sputum to about 150 in the specks. Each speck contained from 3,000 to 5,000 tubercle bacilli.

Guinea pigs were inoculated each with 100 flyspecks scraped from the cage at intervals of one, eight, fifteen, twenty-eight and fifty-five days. Tuberculosis was produced by the inoculated material in the first three animals, showing that virulent tubercle bacilli were present in the specks for at least fifteen days. The pigs inoculated after this interval did not show tuberculosis. A gradual lessening of the extent of the tuberculous process was noted in the successive animals, which was thought to show a gradual lessening in the virulence of the organisms injected.

An attempt was made to infect a guinea pig by inhalation of air drawn through a jar in which flies had deposited specks containing tubercle bacilli, but it was unsuccessful.

Lord points out the danger of such flies depositing specks upon food for human consumption, and suggests that greater care should be exercised in keeping flies from sputum, tuberculous pus and other tuberculous material. He suggests more careful screening of the windows and doors of hospital rooms and wards containing tuberculous patients, as well as laboratories where such material is examined.

He reviews briefly other observations similar to his own.

Studies on the Tuberculin Reaction.

E. L. TRUDEAU, E. R. BALDWIN AND H. M. KINGHORN. *Journal of Medical Research*, 1904, Vol. XII, p. 169.

These investigators detail the results of an extensive study of tuberculin, carried on during the past four years. Their object has been to obtain a better understanding of the nature and specificity of the tuberculin reaction. As the experiments were made exclusively with guinea pigs and rabbits, it is necessary, perhaps, that caution should be observed in applying the results to the human being, as these animals are less susceptible to tuberculin than is man. Six different questions have been taken up:

(1) *Can the diagnostic use of tuberculin scatter the disease and produce new tuberculous foci?* To determine this point a number of guinea pigs were inoculated subcutaneously with tubercle bacilli. Of this group, one-half were selected for tuberculin injections and in the others the disease was allowed to run its course. All animals died eventually of generalized tuberculosis. The duration of life in those receiving tuberculin averaged ninety-six days, and those of the control group, 103 days. The tissues showed no difference in the character of the lesions. In another experiment, rabbits were inoculated in the cornea with tubercle bacilli. These were also divided, one portion receiving tuberculin and the other used for controls. In the animals receiving tuberculin no spread of the disease from the cornea could be observed; on the contrary a favorable absorptive influence was noted.

(2) *Effect of the removal of a tuberculous focus on the tuberculin reaction-susceptibility.* This question was studied by two methods, first, localized eye tuberculosis in rabbits was eradicated by complete enucleation of the eyes; second, abscesses produced by subcutaneous injection of living and dead tubercle bacilli were excised. Tuberculin was administered before and after the healing of the wounds. The animals were after-

ward killed and examined for concealed tuberculous foci. The results were unsatisfactory, as in but one rabbit was the tuberculous focus completely removed by operation. In this rabbit there was a loss, however, of reaction-susceptibility.

(3) *Is the reaction always dependent upon the presence of specific tubercles?* In these experiments, foreign bodies were produced by injecting powdered glass in the peritoneum of the rabbits. They were without positive result. In another series of experiments, bacteria were enclosed in sealed Berkfeld filters and plugs of "kieselguhr" and placed in the abdomen of the animals. These sealed filters allow a slow dialysis of the soluble products of the bacteria without however the escape of the organisms themselves. No signs of local reactions were found about these capsules except when imperfectly sealed. The temperature elevations gave no evidence of susceptibility to tuberculin as a result of the presence of bacilli in the filter capsules. Hence it is evident that either the poison contained in the bacilli was not diffused through the capsules in sufficient amount to produce susceptibility in the surrounding tissue, or if so diffused, did not remain stored in the tissues as has been assumed to be true of tubercles containing actual living or dead bacilli. In either case the presence of tubercle bacilli or their substance in the tissues appears necessary to a true tuberculin reaction. In connection with these experiments it is worthy of note that the nuclein substance of tubercle bacilli which is known by chemical research to be the most important poison in tubercle bacilli will not pass through a filter.

(4) *Reaction from other substances than tuberculin.* The effect of trypsin, peptone, cinnamic acid, succinic acid and atropin were observed on tuberculous animals under a variety of conditions and compared with that of tuberculin. Temperature and local reactions may occasionally result from the injection of trypsin, peptone and sodium cinnamate. These reactions, however, were not uniform and rarely took place except when large doses were injected, which by the bulk of fluid introduced as compared with the weight of the animal may produce constitutional disturbance and fever. Atropin produced no reaction in moderate doses. The local reactions occurred very seldom and except in fatal poisoning by peptone did not bear a close resemblance to the typical tuberculin reaction. It is possible that mixtures of albumoses known as peptone contains proteid substances chemically similar to tuberculin, injections of which excite more or less reaction in the tuberculous tissue, according to the age and sensitiveness of the tubercles. The direct action of trypsin upon tuberculous abscesses failed to produce reaction, and thus does not favor the enzyme theory of the tuberculin reaction.

(5) *How long after infection with tubercle bacilli does reaction-susceptibility begin?* This problem was studied only in relation to the temperature reaction which unfortunately was found to be an unsafe criterion in guinea pigs and rabbits. Nevertheless, within certain limits the results are instructive and worthy of mention. In these series guinea pigs were inoculated intraperitoneally, and daily tests were made. No uniform results were obtained at an early stage, owing to individual variations of temperature. When, however, the average temperatures are con-

sidered in series of five guinea pigs, the reaction-susceptibility is apparently distinct on the fourth and fifth days after inoculation, then irregular until the thirteenth or fourteenth days, after which reactions are the rule. Since it is well known that ten to fifteen days are required for the full development of tubercles it is more than probable that the specific susceptibility is not fully acquired until this stage is reached.

(6) *What constituent of the tubercle bacillus induces reaction-susceptibility in the animal?* It is well known that ordinary tuberculin as such does not produce susceptibility to itself when repeatedly injected into healthy animals; yet the source of tuberculin—the living or dead bacillus—does confer such susceptibility when introduced intact into the tissues. The natural inference is that complexity of structure in the substance of the bacillus may be necessary to produce such susceptibility and by chemical or other treatment its properties might be altered. In order to determine this point, injections were made of bacilli exhausted in the preparation of tuberculin and by boiling in water and of bacilli thoroughly extracted with alcohol and ether to remove the fats. Of these the tuberculin extracted bacilli still retain enough active substance to produce susceptibility. The fat extracted bacilli had more reaction-susceptibility than the others.

These experiments suggest that the nuclein substance of the bacilli is more important for the production of reaction-susceptibility, although no evident conclusions can be drawn from such a small series of observations.

PEDIATRICS

Edited by Henry L. K. Shaw, M. D.

Fever and Feverishness in Children.

CHAPMAN. *The British Journal of Children's Diseases*, January, 1905.

The author points out the fact that the present scheme of medical education precludes the student from gaining a familiarity with the beginnings of disease which was the common knowledge of those trained under the former system of pupilage under a general practitioner. This is especially true as regards the more common ailments of children and these occupy a large part of the routine practice of a family doctor. The author seeks to avoid what may be termed the curiosities in children's diseases and to enter only into a discussion of some of the every-day problems.

He is opposed to the comfortable and "short cut" diagnosis of "teething." The public are only too ready to find their own explanation of a child's indisposition and this vanity is fed by a too ready concurrence of the doctor. Dentition is a normal process and need not cause any concern. Acute illness may occur during the dentition period, but the fever which then occurs has nothing to do with teething. Contemporaneously with dentition comes the development of the nervous system and similar developmental changes occur in digestive organs, preparatory to the reception by the stomach of food other than milk. These structures are all sensitive to any form of irritation during this period. Symptoms attributed to dentition most frequently are caused by a chill to the surface of the body from insufficiency of clothing or some error of diet.

Tonsillitis is a frequent cause of fever in children and one often overlooked. Stress is laid on the importance of examining the throat in all cases of feverishness. The association of rheumatism with tonsillitis should not be overlooked.

Gastro-intestinal irritation forms one of the most frequent causes of the condition under consideration. Under this head comes the effect of food unsuitable in quality or excessive in quantity.

Feverish attacks after children's parties are very common. Not only the effect upon the nervous system, but the pernicious custom of having the refreshments served by contractors is responsible.

Insufficient protection of the abdomen and legs from cold is often an unrecognized cause. The throat and chest are muffled up, but the diaphragm marks the line of defence.

The chest should receive careful attention so as not to overlook a small area of broncho-pneumonia.

A few very conservative remarks are devoted to the treatment. Fever is a symptom and not a disease and the treatment should be confined to the removal of the underlying cause.

Concerning the Use of Buttermilk. (Ueber Buttermilch.)

MASSANEK. *Jahrbuch für Kinderheilkunde*, November, 1964.

From time immemorial, buttermilk has been used for infant feeding in Holland, and its use has been greatly extended since the publication of Teixeira's results in 1902. The author is an assistant physician at the St. Johannes Spital in Budapest, and the article is the outcome of a ten months' trial on seventy-nine babies. Forty-nine of these were in the hospital, fourteen in the maternity hospital and sixteen in the Out patient department. The author found that large quantities of buttermilk were thrown away daily in Budapest and that it could be purchased at a very low price.

Buttermilk is a by-product in the manufacture of butter from sour milk or cream. It is whitish in color and sour to taste and smell. The casein is suspended in a very fine state of coagulation which settles to the bottom of the bottle on standing, leaving a yellowish serum on the top. The amount of fat varies from one-fifth to one per cent. The buttermilk was obtained four hours after churning. The mode of preparation was as follows: To each liter of buttermilk, fifteen grams of rice flour and sixty to ninety grams of ordinary beet sugar were added. This is brought to a boil four times and then sterilized in a Soxhlet apparatus for the minutes.

The buttermilk thus prepared was taken with eagerness by all the infants.

Fewer cases of acute diarrhoea occurred among the infants than before the employment of buttermilk. He did not observe any bad effects attributable to the use of the buttermilk in the hospital or out-patients. In the maternity hospital it was given alternately with the breast and was well borne.

In the sterilized buttermilk, the lactic acid bacteria are destroyed, but their product, lactic acid, remains. The author believes the lactic acid

has a disinfectant action and aids the process of peptonization. While the reaction of the milk is strongly acid the stools are always strongly alkaline.

Special stress is laid by the author on the fact that no cases of rickets occurred among the children nourished on buttermilk.

Besides the clinical study of infants nourished on buttermilk, the author made a number of careful researches on the changes in metabolism. From his investigation, Massanek concludes that buttermilk can be employed in feeding both sick and healthy infants and can be continued for sometime. It is an exceptionally valuable form of nourishment which is not only the equal of other forms of artificial feeding, but is superior on account of its great cheapness.

The Bacteriology of Broncho- and Lobular Pneumonia in Infancy.

MARTHA WOLLSTEIN. *Journal of Experimental Medicine*, 1905, VI, 391.

Martha Wollstein for several years has studied the pneumonias of infancy, occurring at The Babies' Hospital, New York, with the view of determining the relationship between the extent of the pneumonic areas and the variety of bacteria present, and the difference, if any, between the bacteriology of the primary and of the secondary infections.

One hundred cases were examined, of which thirty-three were primary and the remainder secondary pneumonias. In the thirty-three cases with primary lesions the pneumococcus was found in fifteen in pure culture, in seven associated with the streptococcus, and in three with the staphylococcus pyogenes aureus. The streptococcus was found alone in two cases and with the staphylococcus aureus in two. The latter organism occurred in pure culture twice and in two other cases were associated with the streptococcus and oidium albicans in one and with the colon bacillus in the other. As regards the extent of the lesion, the pneumococcus was present in a somewhat larger percentage of those pneumonias involving the greater part of one or both lobes, as compared with those cases in which the foci of solidification were scattered throughout one or both lungs.

The secondary broncho-pneumonias occurred in connection with athrepsia, entero-colitis, diphtheria, measles, meningitis, cerebral abscess, malaria, septicæmia and tuberculosis. In these cases, a total of sixty-seven, the pneumococcus was found in forty-three, but in pure culture in only ten; of other organisms, the streptococcus and staphylococcus aureus occurred most frequently. In two of five cases of diphtheria the diphtheria bacillus was found in one in pure culture, in the other associated with the streptococcus. In two cases of general infection with *B. pyocyaneus*, this organism as well as the pneumococcus was found in the pneumonic areas. In twenty-five cases of associated tuberculosis of the lung and acute broncho-pneumonia, the pneumococcus was found in pure culture in seven, associated with pyogenic cocci in nine; the latter alone in seven.

Summarizing the 100 cases examined we find the pneumococcus in sixty-seven, and occurring in a larger proportion of primary than secondary lesions. Considering the pure cultures only, this organism oc-

curred in forty-two per cent. of the primary and in but fifteen per cent. of the secondary pneumonias. A fibrinous pleurisy was decidedly more frequent in connection with the pneumococcus infections; while no difference was observed in the occurrence of empyæma. The cases with coalescence and more or less massive involvement showed a larger percentage of pneumococcus infections than did those with focal lesions: The pneumococcus cases showed a greater tendency to abscess formation. In general, when a broncho-pneumonia is secondary to a local or general infection it is due to the same micro-organism.

Hereditary Syphilis in the Second Generation. (Hereditäre Lues in der zweiten Generation.)

C. BOECK *Berliner klinische Wochenschrift*, Bd. XLI, p. 968, September, 1904.

Boeck reports four cases of hereditary syphilis in infants, the children of three women themselves showing undoubted signs of this disease. In all these instances the grandmothers of the children had been previously treated in his clinic (Christiana) for syphilis in one or other of its usual stages, and in one instance the mother of the child had herself been treated there for hereditary syphilis, twenty-nine years before.

All the children showed unmistakable lues, with coryza, maculo-papular eruption, scaling of the palms and soles, pigmentations, rhagades, etc.; one case had marked paronychia and one had pains in knees and legs.

The mothers varied in age from twenty to twenty-nine years at the birth of the children. They all showed rhagades and two of them had Hutchinsonian teeth. None showed any signs of secondary syphilis or of a reinfection.

In only one case was it possible to examine the father of the child, though each of the women was married, but in this case he gave absolutely no history nor showed any traces of the disease. The circumstances surrounding the other cases are carefully analyzed to show that it is extremely unlikely that the mothers had become reinfected or that the infection had been transmitted through the father.

Boeck maintains as his opinion that the time is not far distant when very little importance will be ascribed to the possibility of paternal transmission of lues. He states that in Sweden, cases of hereditary lues from the father are even now considered to be of the most extreme rarity, and that in his experience he has never seen a case that he was compelled to assign to paternal transmission. He has had only two doubtful cases, and in these instances he was denied the opportunity of examining the mothers of the children, as they occurred among his better patients.

Boeck points out that the time the syphilitic virus, of whatever nature it may be, lay dormant in the mothers of these children (twenty, twenty-one, twenty-six and twenty-nine years) before showing virulent symptoms in their offspring, is no longer than the period often observed in acquired syphilis between the primary and tertiary stages, or between the time of infection in girls and the birth of their children with the hereditary manifestations of the disease. He mentions one case of W. Boeck in which this latter period was thirty-seven years.

MATERIA MEDICA AND THERAPEUTICS

[Edited by Spencer L. Dawes, M. D.]

On Auxiliaries of Climatotherapy.

I. BURNEY YEO. *The Practitioner*, December, 1904.

In an address read before the British Congress on Tuberculosis in 1901 on the "Climatic Treatment of Consumption," Yeo made the statement that "care without climate is better than climate without care," also that "it is possible to make bad use of a good climate and good use of a bad one." The truth of this statement had long been felt by most physicians when they applied the results of their experience to the estimation and examination of the value of climatic treatment in cases of pulmonary tuberculosis. It is acknowledged that the subjects of this disease are among the most wilful and insubordinate of patients, and therefore the most difficult to manage, the good results that might have been anticipated from suitable change of climate being frequently compromised by the indiscretions and disregard of medical directions and control which these patients displayed. Hence arose the modern method of the treatment of phthisical patients in Sanatoria.

The success of treatment in these institutions is perhaps a little overestimated, but compares most favorably with results formerly observed under similar climatic conditions; and the results obtained in Sanatoria not enjoying the best climatic conditions, if they are to be accepted without discussion—quite justify the proposition that "*care without climate is better than climate without care.*" The nature of this care consists in a strict attention to the smallest detail of the patient's life—his food, his digestion, his exercise, his repose, his clothing, the care of his skin by baths and frictions, his hours of sleep, and even his speech and conversation. Nothing occurring in the patient's life is too small for attention and regulation. "*In Kleinem gross*"—"great in little things"—was the motto of the late Dr. Detweiler of the Falkenstein Sanatorium. There is a great difference between submitting a patient merely to climatic conditions, which may vary from season to season and over which we have no kind of control, and placing him in a sanatorium in the same climate where the patient is the subject of constant and skilled observation.

The object of Yeo's paper is not to discuss the results of the treatment of pulmonary tuberculosis in climatic sanatoria, but to suggest in the treatment of other diseases that are amenable to climatic treatment, the provision in climatic resorts of analagous auxiliary measures which are as needful in these cases, if we aim at obtaining the most favorable results, as in the case of the tuberculous individual. For instance, chronic gastric catarrh, early hepatic cirrhosis, diabetes, glycosuria conditions associated with gouty and cardio-vascular changes, chronic rheumatism, chronic paludism and malarial cachexia and many other diseases are benefited by change of climate, but need much treatment and care beside.

These patients should not be submitted to the regime of the *table d'hôte* and the fluctuating and often unhygienic conditions of hotel life, but an attempt should be made to provide them, under regulated, uniform, and skilled direction, with the diet, the thermal treatment, the suitable exer-

cises, the periods of repose, the electrical, mechanical, and other skilled treatment under constant medical supervision. In each great climatic resort there should be an institution which should be in part a hotel, in part a club, and in the main a sanatorium where all auxiliary measures of treatment should be provided. Here the food should be according to prescription in order that each should get precisely the kind of diet best suited to his case. The patient needing thermal treatment would find the same kind of waters in the winter which he finds in the summer at the great resorts and such of the waters as can not be well transported may be artificially prepared. The cardiac patient could be provided with as satisfactory and useful balnear and gymnastic treatment as he obtains at Nauheim, without the risks and inconveniences which he undergoes at that much vaunted resort. The various means for the treatment of diseases of the respiratory tract should be at hand and the advantage of having these remedial measures all under one roof and under uniform control and direction is too obvious to need demonstration. Wisely directed social conditions and amusements should be provided and much of the mental and moral depression which come to the patient from loneliness would be done away with.

Such an institution should be a municipal one, for it should not be exposed to the risks and uncertainties, financial and otherwise, which are inseparable from private enterprise.

The Internal Administration of Formaldehyd. (Ueber die interne Wirkung vom Formaldehyd.)

JACOBSON. *Die Therapie der Gegenwart*, November, 1904.

The combination of formaldehyd with indifferent substances as milk sugar is free from caustic action, thus differing from pure formaldehyd. On this account large doses may be thus administered without injury. A dog weighing twelve kilos received daily 160 grammes of a two per cent. mixture of formaldehyd in milk sugar for ten days or thirty-two grammes of formaldehyd. In the urine 27.4 per cent. of the formaldehyd was directly determined and 3.6 per cent. more in the distillate. In order to determine its action on toxins, experiments were made on animals with diphtheria toxine. Animals who received a toxic dose of the toxine with .03 grams formaldehyd lived. Roseburg stated in the discussion that he had treated cases of angina, scarlet fever, erysipelas and cystitis with large doses in milk sugar and had good results and believed that such treatment as an adjuvant to serum treatment was indicated in infectious diseases. Weintraud called attention to the value of large doses of formaldehyd in the uric acid diathesis as formaldehyd makes a very soluble combination with uric acid.

The Action of Morphine in Cardiac Patients. (Zur Lehre von der Morphinwirkung bei Herzkranken.)

ROSIN. *Die Therapie der Gegenwart*, December, 1904.

Rosenbach determined some years ago the favorable action of morphine in indicated cases with severe disturbances of the heart. This has been confirmed by other writers, showing that under certain conditions morphine has great value either in place of the specific heart tonics or preparatory to them. The writer gives in detail the history of a case of myocar-

ditis with failure in compensation, in which after digitalis and its congeners had been of no avail morphine had proved efficacious. This was given in doses of one centigram five times in twenty-four hours for the first week, then gradually decreased until at the end of the sixth week no morphine was given. This case proves that morphine has a curative effect on certain severe disorders of the heart, as it not only modifies the subjective disorders, but corrected the apparently fatal failure of compensation. It also shows that the administration of medium sized doses of morphine does not injure the heart. The rare cases of death in heart disease after the use of morphine are to be attributed to the severity of the heart lesion. Moderate doses of morphine have no influence on the blood pressure and vascular system.

Although there is no direct experimental explanation for the favorable action of morphine in heart diseases, yet the experimental work of Roth-Schulz gives a cue. When there is an improvement in the failing compensation there is an increased secretion of sodium chloride in the urine, Roth-Schulz found that in circulatory disorders after the administration of morphine there was a marked increase in the excretion of chlorides.

On Zomotherapy in Pulmonary Tuberculosis.

R. W. PHILLIPS. *The Practitioner*, January, 1905.

The selection of a suitable dietary for a patient suffering from pulmonary tuberculosis is of the first moment and in no disease is it more certain that benefit will accrue according as care is expended in the selection, nowhere is ignorance or carelessness more likely to prove disastrous.

While there are many aspects of dietary in pulmonary tuberculosis which afford scope for interesting consideration and discussion, the present contribution is concerned chiefly with the use of raw meat. Zomotherapy as it has been termed by Professor Richet, consists in the *systematic, continued exhibition of raw meat in the treatment of the disease*. In strictest sense it is the treatment by raw meat juice. It is not a mere variation in the quantity and quality of the diet supplied, governed as such variation is apt to be by the varying temper or caprice of the patient; it is the therapeutic procedure determined by the patient's needs in the light of experimental and clinical observations. In this sense the form and dosage are to be regulated in the way in which we regulate the exhibition of any drug.

For fifteen years raw meat in one form or another, has formed a conspicuous factor in Phillip's treatment of tuberculosis, and since the publication of Hericourt and Richet's researches it has become routine treatment. During the past four years he has made detailed observations in more than 200 cases. Hericourt's and Richet's observations showed that tuberculous animals fed on cooked meat underwent progressive emaciation, while those fed on raw meat or on muscle juice, freshly expressed, gained considerable. They believed that those results were due to the presence in the muscle juice of certain ferments, or in the production within the animal under treatment of certain substances resulting from the special stimulation, in either case the effective element

being destroyed by cooking. In this connection it should be remembered that of all the living tissues of the body, muscular tissue is that on which the tubercle bacillus seems to find the greatest difficulty of implantation and development. Galbraith has shown by recent experiments on tuberculous subjects and on healthy persons that (1) the exhibition of raw meat was followed by a marked increase of nitrogen retention, provided the heat value and nitrogen of the diet exceeded the actual requirements of the individual per kilo. of body weight, (2) the intestinal metabolism was improved, an improvement which continued for some time after a return to cooked meat, (3) there was a rapid increase in hemoglobin, the amount in one instance being from ninety in cooked meat feeding to 102 in raw meat exhibition, a rapid fall taking place when a return was made to cooked meat, (4) digestive leucocytosis (lymphocytosis) was remarkably increased, amounting in several instances to more than double the digestive leucocytosis occurring in relation to cooked meat. This is highly significant, as we have already seen, there is in tuberculosis excessive nitrogenous waste. There are several modes of exhibition of the raw meat: (1) Pounded raw meat, *i. e.*, finely minced beef, slightly seasoned to taste is served natural like mince collop, cold or gently warmed throughout, one-half pound two or three times a day. The fresher the meat the better, if possible it should be obtained direct from the slaughter house. (2) Beef-juice prepared as follows: Extract one-half pound of meat in one-half pint of cold water plus one-half teaspoonful of salt for one and one-half hours at 100 degrees, Fahrenheit. Express the liquid through a cloth and serve. Or the juice may be expressed from the meat directly without the addition of water. This should be freshly prepared each time as it readily undergoes changes. (3) Raw meat soup: One-half pound of finely minced fresh meat is mixed in a bowl with sufficient milk to produce a thick uniform paste; immediately before serving, add one-half pint of milk at 150 degrees, Fahrenheit. Beef, chicken or veal stock may be substituted for the milk. (4) The patient's meals may be preceded by two or three raw eggs. These should be swallowed whole and not mixed with any other ingredient nor beaten up.

It is a very easy matter to accustom the patient to both the use and enjoyment of one or the other of the raw products just described. This method is of course most serviceable in the early stages of the disease, but very marked improvement often occurs in advanced stages. The results of treatment, based on more than 200 cases are as follows: The patient quickly loses his anemic cast, the tissues rapidly become firm and of a vigorous character, due in part to the increase in hemoglobin and in part to the improved state of the muscles. The gain in weight is gradual and accompanied by a firmness of tissue and is not due to fat increase as is the case in other forms of forced feeding and which is of very doubtful value to the patient. The gain has ranged from ten to thirty pounds. This gain in weight is accompanied by a remarkable increase in muscularity. Soft, flabby muscles fill up and become firm and with this the patient's vigor and sense of well-being keep pace. Myotic irritability lessens and disappears and the patient is soon anxious to exercise, which latter, if not overdone, is of further benefit. The circu-

lation is strikingly affected, the pulse rate being soon lowered and the blood pressure raised. This is due to increased muscularity of the heart and is the most valuable index of improvement. The effect on the temperature is less rapid, but it in turn improves and soon assumes a nearly if not quite normal level. All the gastric disturbances disappear and the functions of the intestines are much improved. There is a rapid increase in hemoglobin, even as much as twenty per cent., and in no case has hemoptysis followed, although some authorities have forbidden its use (raw meat) for fear of this. The symptoms of the patient not only rapidly abate but the physical signs indicating activity of the disease are replaced by signs of quiescence and cicatrization.

The tubercle bacilli become fewer and in some cases disappear.

The disadvantages urged are the natural distaste which many persons have to such raw products and the possibility of the introduction of intestinal parasites along with the raw meat. The latter is not a likely one if reasonable care is taken in the selection of the meat, and even if a parasite be so introduced, the actual harm to the patient is infinitesimal compared with the risk involved by the presence of the disease. The repugnance of the patient is of still less importance, for as soon as the patient becomes convinced that the method is a rational and successful therapeutic measure his distaste disappears and he frequently acquires a positive liking for the raw meat.

CLINICAL MICROSCOPY

Edited by Arthur T. Laird, M. D.

Contribution to the Study of the Question of the Osmotic Pressure of Exudates and Transudates. (Beitrag zur Frage des osmotischen Druckes der Ex-und Transsudate.)

C. VON RZENTKOWSKI. *Berliner klinische Wochenschrift*, 1904, xli, 227.

The cryoscopic method of examination of the body fluids which has been quite extensively used during the past five years is based on the fact that all solid, liquid or gaseous substances when dissolved in a liquid will lower the freezing point of that liquid, and that the degree to which the freezing point is lowered is dependent upon the amount of substance present in solution. The freezing point of the solution furnishes an index of its molecular concentration and hence, also, of its osmotic pressure. The degree to which the freezing point is lowered is designated by the letter Δ and represents the number of degrees Centigrade that the freezing point of the liquid is lowered below that of distilled water.

The author states that exudates and transudates have often been examined by cryoscopy, but without important result. The author reports results of cryoscopic determinations of these fluids which he has made while carrying on other studies regarding them.

(1) In eight patients with tubercular pleurisy the average lowering of the freezing point below that of distilled water was found to be 0.52 degrees, somewhat less than the depression in the case of the blood (0.56°). In a case of serous pleurisy, probably of rheumatic origin, the lowering of the freezing point was 0.54°. Three cases of empyema gave

an average value for Δ of -0.84° . This suggests to the author that the more pus corpuscles the exudate contains, the lower the freezing point, and he also concludes that the older the exudate the lower the freezing point reaches.

(2) Tubercular exudates in the peritoneal cavity gave in three cases a rather high freezing point, the average value of Δ being -0.523° . In one case the patient also had a pleural exudate with a lowering of the freezing point of the pleural fluid of 0.51° . This fact would indicate that, other things being equal, the location of the exudate has no marked influence on its molecular concentration.

(3) In eight cases of cirrhosis of the liver with ascites the lowering of the freezing point of the fluid averaged 0.536° . This does not differ enough from the lowering of the freezing point in tubercular exudates to be a point of great diagnostic value.

(4) The freezing point of three carcinomatous exudates showed an average value for Δ of -0.547° . This increased molecular concentration had probably nothing to do with a similar concentration in the blood of such patients but was, without doubt, due purely to local processes as, for example, the destruction of the cell protoplasm of the new growth and the solution of its mineral salts in the surrounding fluid.

(5) Transudates in the peritoneum in three cases of nephritis and one case of uncompensated heart disease, and transudates in the subcutaneous tissue occurring in one case of nephritis, three cases of uncompensated heart disease, and one of pericarditis were all studied by cryoscopic methods. In the nephritic cases the lowering of the freezing point averaged 0.538° . In the others, in all of which there were disturbances of circulation, the average was 0.548° . The average depression in this case of all the transudates was lower than in the case of the exudates, showing the greater molecular concentration of the former. In individual cases, however, the variations are so slight that cryoscopy is apparently of little diagnostic value in identifying exudates and transudates. The transudates connected with nephritis, as was noted, have a higher molecular concentration than those which accompany disturbances of the circulation. This, the author thinks, is due to a vicarious excretion of nitrogenous material (non-albuminous), which he calls "retention nitrogen." This excretion takes place through the walls of the capillaries instead of through the kidney epithelium.

Standard Records of the Leucocytes in Normal Blood for Reference in Clinical Work.

HENRY P. HEWES. *Boston Medical and Surgical Journal*, 1904, cli, 705.

One of the chief purposes for which the examination of blood is utilized in clinical work is the determination of the presence or absence of leucocytosis, its nature and extent. For this complete determination it has been almost universally the custom to employ two methods of examination (1), the count of the leucocytes by the blood-counting apparatus (2), the differential count in the stained specimen to determine the type.

According to the author it is now possible to determine both the existence and type of the leucocytosis by the examination of a stained specimen alone. He counts the number of leucocytes in one or two hundred microscopic fields of the specimen under examination and compares the record with standard records of normal blood examined in a similar manner. If the number present exceeds the normal we have a leucocytosis. A differential count may be made with the same specimen.

To fit himself for the application of this rapid method in his practice each man should make a set of records from the examination of normal blood with his own technique and using his own microscope, thus lessening the personal equation in the matter.

To make the necessary tests of the accuracy of the method and also to obtain a set of standard figures for his own use the author conducted an investigation upon thirty normal individuals, students at the Harvard Medical School. In the first ten men the blood counts were made at 11 A. M., in the second ten at 4 P. M., and in the third ten both at 11 A. M. and 4 P. M. A Leitz microscope was used with one-twelfth oil immersion lens and a No. 3 eye piece. The tube was pushed in to the limit. In studying the stained specimens films were selected in which the red cells did not overlap each other, but yet lay very evenly in the fields, keeping their normal contour and showing their pale central areas. The records by counting in the stained specimen corresponded with the records of the count by the Thoma-zeiss apparatus quite sufficiently for purposes of diagnosis. Fifty leucocytes per one hundred fields was equivalent to about eight thousand cells per cubic millimetre, one per field to sixteen thousand cells. The computation was accurate within two thousand cells.

A review of the table presented indicated that the number of leucocytes was almost invariably higher in the mid-afternoon than in the mid-forenoon in the same individual, as a rule to the extent of 3,000 to 4,000 cells, a fact which should be borne in mind. In the afternoon counts in three normal individuals were found from 14,000 to 18,000. The author considers 14,000 as about the upper limit of the normal number per cubic millimetre.

No definite high proportion of neutrophiles or low proportion of basophiles as an associate of the higher leucocyte counts could be determined.

The Medico-Legal Diagnosis of Death by Drowning, by means of Physico-chemical Methods. (Die gerichtsarztliche Diagnose des Ertrinkungstodes durch physikalisch-chemische Methode.)

M. CARRARA. *Folia hematologica*, 1904, i, 330.

An important phenomenon in death by drowning is the entrance of the fluid causing death into the respiratory tract, and its passage thence into the blood current. In consequence, the blood becomes diluted and since the fluid enters the blood through the pulmonary circulation, it results that the dilution is greater in the left side of the heart.

The author has studied the freezing point of the blood in dogs that died by drowning. The blood from each side of the heart was tested separately and also that from the general circulation. There was found

to be a marked lowering of the molecular concentration of the blood in the left side of the heart and in the general circulation. The author considers a difference in the molecular concentration of the blood in the two sides of the heart very strong evidence of death by drowning and a lowering of the blood concentration in the general blood current as valuable but less conclusive evidence, as hydremia may be brought about by disease. In the latter case the degree of dilution is rarely as great as that found after drowning.

Since a body, death not having occurred by drowning, which had been kept in the water several days showed no dilution of the blood the author believes that it is frequently possible to determine by cryoscopy whether a person died by drowning or the body was thrown into the water after death.

Cryoscopic methods, he believes, can also determine whether fluid in the lungs is due to edema or has entered during drowning.

Since drowning in fresh water decreases the molecular concentration of the blood by dilution and drowning in salt water by a similar dilution increases it, the author believes that in this way it can be determined whether a person was drowned in fresh water or salt water.

A number of estimations of the molecular concentration of the blood were made with the use of the Kohlrausch method in which the electric conductivity of a fluid is the index of osmotic tension and molecular concentration. Similar results were obtained by this method to those obtained by cryoscopy.

The author also reviews the work of other investigators along this line. Revenstorf's studies of blood in the cadaver are especially interesting. He found that after death the concentration of the blood increases at a gradual uniform rate if the temperature remains constant, so that an estimate can be made by cryoscopy of the time that has elapsed since death. If the temperature varies the test has less value as the progress of concentration varies also. Evaporation is one of the factors producing the increased molecular concentration. Decomposition makes the test less reliable.

Note on a Stain Applicable to Differential Leucocyte Counts in the Counting Chamber.

B. ONUF. *Journal of Medical Research*, 1904, xii, 87.

The author uses a diluting fluid in making blood-counts which is composed of the following ingredients: (1) twelve per cent. aqueous solution formalin; (2) one per cent. solution sodium chloride; (3) one-half per cent. aqueous solution eosin; (4) Unna's polychrome methylene blue.

Equal volumes of these four fluids are mixed and filtered. The author first mixes 1 and 2, and then adds 3 and 4. The staining of the cells takes place gradually, but is hastened by a moderate heat, not above body temperature. The preparation is ready for use in fifteen to thirty minutes. The red cells appear pale yellow; the white cells show distinctly nuclei, protoplasm, and granules, the neutrophile granulations being violet, and the eosinophile granules bright red. The nuclei are usually purple. The lines of the scale in the counting chamber are not obscured and there is

no precipitate. The objection has been raised that with a dilution of one to two hundred only a limited number of leucocytes can be counted in one specimen; a plate accompanies the article showing a counting chamber, designed by the author to overcome this drawback, which has a ruled area of fifty square millimeters and which would contain 250 leucocytes if the blood were normal, and diluted two hundred times. The Tuerck modified counting chamber contains nine square millimeters of ruling and with it, by making several preparations a sufficient number of cells could be counted to obtain an accurate differential estimate.

The Diagnosis of Mild Degrees of Jaundice. (Zur Diagnose der schwächeren Grade des Ikterus.)

LAD. SYLLABA. *Folia haematologica*, 1904, i, 636.

The author found in studying cases of pernicious anemia and chlorosis that bilirubin could be demonstrated in the blood when it could not be found in the urine, and came to the conclusion already expressed by Hamer that the examination of the blood serum for biliary coloring matter is the most delicate and most satisfactory test for the presence of icterus.

Hamel's method is very simple (*Deutsche medizinische Wochenschrift*, 1902, No. 39). In a small capillary tube such as is used in collecting serum for the Widal test, fifteen to twenty drops of blood are collected, both ends of the tube are closed with wax and the tube is then laid aside for some hours until the serum thoroughly separates from the clot. Under normal conditions the serum is clear and like water or very slightly cloudy. In beginning of jaundice it is yellow.

Syllaba regards Hamel's method as sufficiently accurate for clinical purposes, but for definite demonstration of the presence of bilirubinemia, isolates the bilirubin from the blood serum by Gerhardt's method which he describes.

ALBANY MEDICAL ANNALS

Original Communications

THE PUBLIC HEALTH LABORATORY.

Read at the Ninety-ninth Annual Meeting of the Medical Society of the State of New York, February 1st, 1905.

By HERBERT D. PEASE, M. D.,

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The former conception of science and research as fields of work set apart from any consideration of practical utility is happily passing. It is hardly needful in these days to dwell upon the necessity for the pursuit of investigation and research into the fundamental problems of biology, chemistry and physics in their relation to the normal and pathological conditions found existing in man. It does seem important, however, to continue to dwell upon the need for the adherence to the scientific spirit, in the application of the results of fundamental research to the general problems of the prevention of disease and the protection of the public health. How important it is to thus adhere to the scientific method in the application of natural fundamental truths to practical problems, is shown by the fact that the pursuit in the true scientific spirit of what has been so long called the practical, has ultimately carried us far toward the satisfactory elucidation of many of these same fundamental problems. It was through his attempts to standardize diphtheria antitoxin that Ehrlich was led to elaborate the theories of immunity associated with his name, and it has been largely through the efforts of public health laboratory workers to formulate methods for the rapid differentiation of pathogenic bacteria from other but closely related forms that the chief stimulus has been given to the attempts to place the classification of bacterial species upon a sound biological basis.

If we ask what is the scientific method, the reply comes from one of its masters, Prof. C. S. Minot,¹ that it is only the right method of ascertaining the objective truth. The right method, he states, consists in observation and reasoning, but such operations must be characterized by precision borne only through the severest discipline.

For the application of the scientific method in the efforts made to maintain the public health, and in the prevention of disease in its widest sense, it is manifestly prerequisite that those entrusted with such work have at their command the widest, most searching, and precise means and methods of observation.

For these accurate and searching observations it has long been recognized that numerous technical examinations and analyses are absolutely necessary.

For many years all boards of health of any efficiency have been able to command the services of trained chemists for making many technical examinations. However it has only been since the advent of bacteriological science into the field of medicine that attention has been called to the great necessity for more extensive laboratory facilities for the proper conduct of the observation aspect of board of health work.

In this country with its vast territory of comparatively recent settlement, its enormous population, its form of government, and its political subdivisions, it has been manifestly impossible for every official hygienic body to have at its command the complete system of technical laboratories for accurate observation which the scientific development of public hygiene calls for.

All the larger cities, owing to the ease with which money for public purposes can be obtained, and also because the demand for the solution of the problems in sanitation are more pressing, have established laboratories where examinations and analyses are made for the benefit of their boards of health and their members of the medical profession.

An ever increasing number of states realizing the need of the smaller cities, towns, villages, and strictly rural districts, for the same laboratory facilities as are enjoyed by the cities, have also established laboratories for chemical, bacteriological and other investigations and examinations to aid in the work of public hygiene.

Some of the states which have established bacteriological laboratory work on a reasonably permanent basis are Massachusetts, Maine, Minnesota, Vermont, Rhode Island, New York, New Jersey, Delaware, Maryland, Ohio, Wisconsin and Iowa, and several more are contemplating such action.

The basis for the internal organization of these laboratories has not followed any uniform lines, but has largely been determined by local conditions. In the large proportion of these states the first laboratory facilities utilized were those of the state or some other university, college, agricultural school or medical school. In many such these conditions have been found to operate for the mutual benefit of both the State Board of Health and the technical institution. This is particularly the case in those states maintaining a state university with its colleges of medicine and natural science.

Under such a regime the state can bring about, by reason of its control of the source of income of both the teaching and official laboratory departments, the closest co-operation between the technical workers and the executive officials of the health department. Such collaboration is manifestly necessary if on the one hand the results of the laboratory investigations are to receive their proper interpretation at executive hands, and on the other hand the practical difficulties in the application of those results to the solution of practical problems are to be properly appreciated by the laboratory worker.

In cases where the teaching institutions have not been closely affiliated with the health departments, and the laboratory workers have not had a vital interest in the proper application of the results of their work, a reorganization of the laboratory has usually followed, and the work has been placed directly under the control and supervision of the executive health officials.

Let us now consider briefly the ever broadening scope of the technical field of work in public hygiene.

In the early days of sanitation when miasms and sewer gas were supposed, through lack of precise methods of observation, to be the carriers of infectious agents, but few technical procedures were necessary in the work of the official health boards. To be sure some disinfection was practiced, but purely on an empirical basis.

Later the chemical examination of water supplies with the

object of determining the presence or absence of contaminations by means of "organic matter" were instituted. The testing of illuminating oils for their safety was also inaugurated. The chemical analysis of samples of milk for the determination of its possible aqueous dilution, and the examination of foods for chemical and other adulterations were likewise considered a part of the technical work of official health bodies. Rarely indeed was any of this work carried on systematically.

As has been said it remained for the new era in the development of our knowledge concerning the etiology of some of the infectious diseases, to demonstrate the necessity for the further enlargement of the field of technical endeavor in public health work.

We are all too familiar with the development of modern bacteriology to require its repeated recital. It is sufficient to call to your attention the following bacteriological procedures which have been placed on such a satisfactory basis as to enable them to be used in the routine work of public health laboratories.

The bacteriological determination of the presence or absence of diphtheria bacilli in diseases suspected of being diphtheria.

Like determination of tubercle bacilli in cases of suspected tuberculosis.

The determination of the presence or absence of the power of producing the so-called Widal reaction in the serum of cases suspected of being typhoid fever.

The microscopic examination of specimens of blood from cases of suspected malaria.

Bacteriological and chemical examinations of samples of water, and of water supplies, for the determination of their potability.

The bacteriological or microscopical examination of samples of milk, or of milk supplies, with the view of ascertaining the care exercised in the production or handling of this food.

Chemical analyses for the presence of poisons and adulterations of foods.

Procedures for testing the bactericidal and disinfecting power of chemical and physical agents.

The preparation of diphtheria and tetanus antitoxins, and the testing of samples of the same for the determination of their quality and purity.

The preparation of vaccine for vaccination against infection with smallpox and the determination of the efficiency and purity of samples of the same offered for sale.

The diagnosis of rabies in animals and the protective treatment of individuals who have been bitten by rabid animals.

Doubtless many of you have registered a mental protest at least, against the statement made that the procedures for performing all of these tests are entirely satisfactory. Let there be no misunderstanding on this point. None of the methods in present use are in the least permanently satisfactory in the eyes of the majority of those employing them.

Indeed the very defects and weak points in these tests constitute the chief reason why the public health laboratory should be more abundantly provided for and its work encouraged, for these defects indicate that either our present conception of fundamental laws are incorrect, or our application of them to the practical problems is directed along improper lines. Let us consider a few examples.

When the public health bacteriological laboratories began to make examinations for the bacteriological diagnosis of suspected cases of diphtheria, it was supposed that diphtheria bacilli were a distinct species, easily differentiated from all other species of bacteria. It was also taken as proven that these bacilli were present only in the mucous membranes of those suffering from diphtheria. Up to that time clinicians generally believed that for a case to be diphtheria, false membrane must be present on the affected area at some time during the course of the disease. Both bacteriologists and clinicians were destined to learn much from the application of the laboratory tests and investigations to these supposed truths. The former were depending on the results of researches, conducted largely upon absolutely typical cases and upon the studies of pure cultures of the diphtheria bacillus in the laboratory, while the latter had not entirely broken away from their former conception of most, at least, of the infectious diseases as distinct entities in their clinical manifestations.

It is not necessary to relate in detail how, after a short period of operation of these laboratories, a few cultures from cases clinically diphtheria failed to show diphtheria bacilli, and how a very large number of cultures from cases clinically not diphtheria were found to contain undoubted diphtheria bacilli and

still other cultures were found to contain bacilli for the proper classification of which the conscientious bacteriologist was altogether at sea. Furthermore when cultures began to be made from the throats of healthy persons, diphtheria and these morphologically diphtheria-like bacilli were found in a large proportion of individuals who had been in contact with cases of this disease, and even in a few persons not so exposed.

But complications did not cease here. Bacilli closely resembling the diphtheria bacillus in morphology began to be discovered on the conjunctivæ in measles and other diseases, and in the mucous membranes of the nose under a variety of conditions. These forms resembled diphtheria-like bacilli found in cultures from the throats of suspected cases, and particularly some forms commonly seen in the cultures taken from those convalescent from true diphtheria.

By the application of the scientific method to the study of this very confusing and unsatisfactory condition something has been done toward straightening the tangle, although the situation is still far from satisfactory.

It was soon demonstrated that the clinical manifestations of diphtheria were not uniform in character, and certainly not in severity. Cases mild enough to recover in a few hours were found to exist as well as those with the most extensive membrane formation and severe toxemia. Physicians no longer attempted to make a diagnosis in suspected cases without the aid of the bacteriological examination.

After a short time it became well understood that morphologically typical and actively virulent diphtheria bacilli could be present in the throats and noses of perfectly well persons.

However the most serious complication was, and still is, the relation of these morphologically diphtheria-like bacilli to the true diphtheria bacillus. Notwithstanding the investigations of Westbrook, Hill, Park and Williams, Denny and a number of other workers in public health laboratories, opinion is still divided on the following points: First, whether these diphtheria-like forms are attenuated or non-virulent true diphtheria bacilli or are closely allied bacteria; second, if the former idea is correct are they capable of regaining their former virulence, or if constituting separate species are they ever virulent; third, if these diphtheria-like bacilli are separate species

or races, does the true diphtheria bacillus ever lose and regain its virulence and if so under what conditions in the human air passages does this take place.

These unanswered problems have a most practical bearing. If these forms are not diphtheria bacilli, Hill² estimates that perhaps an average of one week could be cut off of the period of quarantine in localities where they are considered to be diphtheria bacilli and where two negative cultures are required for release of diphtheria convalescents from retirement. This he estimates means one hundred years more liberty for five thousand cases of diphtheria. If on the other hand all these forms are true and virulent diphtheria bacilli, then our conceptions of the transmission of diphtheria would need marked alteration.

What has been said concerning the relation of diphtheria bacilli to similar and closely related bacteria also applies in a general way to the relation of the human tubercle bacillus to the so-called acid-fast bacilli, and its more closely related strains, the bovine and the avian tubercle bacilli. The potentialities for strife and conflict between bacteriologists over these problems has been amply demonstrated by the recent controversy over the relation of the two most closely approximated forms of the tubercle bacillus, namely, the human and bovine. Such conflicts would be far more common, but for the prevalence of the true scientific spirit which actuates most investigators of such problems.

The same general problems are also to be found when we consider the relation of the typhoid to paratyphoid bacilli; that of the dysentery to the pseudo and para dysentery bacilli; that of the colon to the paracolon, and other closely related pathogenic and saprophytic bacteria.

Even the problem of the basis of differentiation of bacterial species is still unsettled. We are as yet lacking in definite knowledge on altogether too many factors in the life history of bacteria to enable us to settle upon a proper basis for the separation of species, much less to outline the limits of further subdivisions.

But the differentiation of species is not the only fundamental problem on which our knowledge is as yet limited. When we are brought face to face with problems, such as the transmission of infectious diseases from person to person, and

endeavor to seek their explanation through our knowledge of the conditions governing the viability, the parasitism and the pathogenicity of the etiological agents of these diseases, we begin to fully appreciate our ignorance in these directions.

Through the use of animal experimentation much has been accomplished in the study of the conditions governing the pathogenicity of bacteria towards man, but there are as yet many limitations to such procedures. For example, the streptococci of human infections are usually non-virulent for experimental animals, and when through progressive inoculations from animal to animal such cultures are made virulent for the animal used, it is found that they no longer exhibit some of the important characteristics they formerly possessed. The effect of a given bacterial species on animals does not necessarily foreshadow its effect on man.

For the study of the conditions controlling bacterial viability under natural conditions, the necessity for maintaining the purity of the cultures used has hampered much research work in this direction.

The very recent adaptation by Jordan, Russell and Zeit³ and also by Frost⁴ of the so-called collodion capsule to the study of the influence of certain waters and sewage under natural conditions upon pathogenic bacteria has been productive of interesting results, and gives promise of further usefulness.

These investigators inoculated capsules with cultures of the typhoid bacillus, and so sealed them that neither the typhoid bacilli could escape nor foreign micro-organisms get in. The inoculated capsules were then immersed in the waters or sewage to be tested under natural conditions. Under these circumstances they found that substances inimical to the typhoid bacillus passed through the walls of the capsule by a process of osmosis and exerted their bactericidal power. The vast majority of typhoid bacilli were killed by a certain contaminated water in from three to four days.

The relation of parasitism to the evolution of bacterial diseases has lately received a most careful review by Dr. Theobald Smith.⁵ Applying the principles of natural selection to those bacteria whose tendency is towards a parasitic existence, such as is the case in the bacilli of tuberculosis, typhoid fever and glanders, he concludes that in the natural course

of the operation of such principles the bacteria causing these diseases will very gradually lose their virulence, and these diseases will assume a milder type. He states, "In the evolution of parasitic bacteria I assume then, that though the function of toxin production may have been the entering wedge towards the parasitic existence, there is a progressive loss of this function as of little use to the parasite after it has once acquired a foot-hold, for the action of toxins at a distance from the focus of multiplication does not aid the parasite while it destroys the host." The escape of the parasite to another host is a very necessary factor for its continued parasitic existence and is as important as its powers of entry and maintenance in their hosts."

The increase of parasitism may however increase the amount of the disease while decreasing its virulence. Moreover Dr. Smith further points out that the march of civilization brings about changes which may operate to divert the course of natural selection, and instead of a decrease of virulence there may be a temporary, at least, increase. "Natural law," he says, "does not stand in the way of our having highly virulent types of disease if we are ignorant enough to cultivate them."

Even this brief and very fragmentary reference to but one or two of the mass of fundamental problems yet to be solved, clearly indicates the necessity for the most vigorous prosecution of their investigation if we would improve the methods and procedures necessary for the routine work of the public health laboratory.

It will doubtless be asked whether such problems will not be undertaken and solved by the workers in academic and other purely research institutions. In reply it can be said that the practical need for the solution of bacteriological problems has always been stronger than has the hope of explaining broad fundamental biological principles through their study. We may certainly expect much assistance from such workers in the final analysis of fundamental problems, but for ascertaining the facts and the collection of data we may look for but little assistance from those not forcibly stimulated to bacteriological research through some every-day necessity.

In connection with the work of the public health laboratory much may be done towards the elucidation of these funda-

mental problems, not only through the proper deductions from statistical studies of the results obtained from large numbers of routine diagnostic examinations and analytical tests, but also in the special study of the unusual and peculiar factors existing in nearly every epidemic or even individual cases of infectious diseases.

Investigations of epidemics of typhoid fever suspected of being brought about by the contamination not only of water in various ways, but of natural foods, such as oysters, milk; also those of epidemics of institutional diphtheria, localized acute dysentery, cerebro-spinal meningitis, or tetanus, are being more and more demanded of health departments.

These special investigations should not however be confined to those infectious diseases the etiology of which is already known, for it is quite possible to discover the methods of transmission of infectious diseases before their causative agent is known as was the case with yellow fever. As was the case in this instance, the correct knowledge of the method of transmission of the disease may be of far greater practical value than that of its etiology.

Most discoveries come as the result of properly seizing and developing opportunities. It all these investigations lie inherent opportunities which however cannot be seized and turned to advantage by the trained investigator if the proper facilities and time are not available for the work.

Every state hygienic institute should have a travelling laboratory containing all the apparatus needed for conducting the necessary field work in such investigations. This should be constantly ready for convenient transportation. Promptness in beginning work in such cases often saves the opportunity.

The potentialities which exist in the opportunities, not only for immediate returns, but also for large additions to our present knowledge of fundamental biological principles, render their neglect a most extravagant policy.

On the basis of sound public policy there can be no question of the responsibility of state governments for the most far-reaching development of public health work. From the standpoint of numbers of persons affected hygienic work has a far broader basis for its demands than even any form of state

charity. Not merely a few but all of its citizens are vitally dependent upon either its activities in these directions or those which it forces or encourages the individual localities to undertake.

When the state in the supervision of its political subdivisions ascertains that through the concentration of action it can bring about greater economy and efficiency, in undertaking to itself perform the duties otherwise devolving upon the local authorities, it is more than justified in so doing.

It is upon this basis that all the extensive charitable, penal and corrective state institutions rest their claims for state support and control.

In matters of public sanitation large cities can on grounds of economy and efficiency establish and maintain public health laboratories for their own immediate benefit. As the smaller cities, villages and towns cannot do so except on an extravagant financial basis, the state, for the protection of its large cities, as well as for the benefit of all its citizens, should undertake that work for the local authorities.

In doing so however the state has the right to expect the utmost support and assistance from the local authorities and their citizens. Such assistance to be of value must be intelligent, and how can it be intelligent if its givers do not know or are not taught the real truths?

On the basis of investment education has always been found to bring large returns. Properly conducted and equipped state health departments with laboratory staffs of scientifically trained workers are constantly coming into either direct or indirect contact with local health officials and members of the medical profession, in the performance of their routine work and investigations. Bringing into their work the results of scientific observations in public hygiene they cannot fail to be a potent education influence and a large medium for what might be termed the post graduate instruction of such health officials and the medical profession in hygienic matters. Indirectly, but largely through these latter agents, the general public become familiar with matters pertaining to this special field of work.

While, as we have already seen, the limits of the possible extension of technical hygienic laboratory work in its two aspects of immediately utilitarian routine work and its funda-

mental research work are not yet in sight, it is all the more true that as a potent educational force its influence has only begun to be felt.

With a proper and expected development of the first two aspects of the work its educational influence will gather speed. Indeed signs are not lacking that local health officials throughout every state will need, demand and be required to have special instruction in the technical, as well as the executive aspect of their work. At present this cannot be demanded of them in advance of appointment, but in any event the march of progress is such that instruction should not and cannot cease with their appointment.

Already conferences of state health officials and schools for the instruction of such officers are rapidly being multiplied, and their success has been very general and decided.

Massachusetts, Vermont, New York, New Jersey, Pennsylvania, Ohio and Minnesota already have such organizations and a vast amount of good is being accomplished by them.

In many of these states plans are already under consideration for the institution of special instruction with the granting of a diploma in public health. For such instruction the technical laboratory, actually carrying on the routine and research work pertaining to this field would be as essential as the hospital clinic is to the teaching of medical practice.

State boards or departments of health will undoubtedly in time either institute such courses of instruction under their own supervision, or will co-operate with some teaching institution for the same purpose. Through such means the official hygienic institute will be fulfilling what should be its highest aim, that is, the education of the people in scientific sanitation and public hygiene.

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- 2 HILL. *Transactions Massachusetts Medical Society*, 1901.
- 3 JORDAN, RUSSELL and ZEIT. *The Journal of Infectious Diseases*, 1904, i, p.
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- 5 THEOBALD SMITH. *American Medicine*, 1904, viii, p. 711.

ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE—THIRTY-SECOND ANNUAL MEETING.

The thirty-second annual meeting of the Association of the Alumni of the Albany Medical College was held in Alumni Hall on Tuesday, May 2, 1905. The usual informal reception was held in the college library, where photographs were exhibited and greetings exchanged, between the hours of 9 and 10:30 A. M. The annual meeting was called to order by the President, Dr. John H. Cotter, ('78), of Poughkeepsie, N. Y., at half-past ten o'clock.

The following named members of the Association, with invited guests, students of the college and others interested, were present: Alexander Ennis, ('55); Henry D. Wells, ('57); Alfred B. Husted, ('63); Charles B. Tefft, ('64); Thomas D. Crothers, ('65); Lorenzo Hale, Romeo E. Hyde, ('68); Daniel C. Case; Willis G. Tucker, ('70); Glibhard L. Ullman, ('71); Daniel H. Cook, ('73); Thomas Wilson, ('74); Seth G. Shanks, ('75); Mark M. Lown, ('77); Frederick H. Brewer, John H. Cotter, Earl D. Fuller, G. P. K. Pomeroy, ('78); Ezra A. Bartlett, William J. Nellis, ('79); Wallace E. Dietz, Walter W. Scofield, John B. Washburne, ('82); Terence L. Carroll, Irving S. Edsall, Alexander L. Johnson, Martin MacHarg, ('85); Hermon C. Gordinier, ('86); Andrew MacFarlane, Charles H. Moore, Henry F. C. Muller, John E. Sadlier, ('87); G. Emory Lochner, J. Montgomery Mosher, ('89); William S. Ackert, ('91); LeRoy Becker, Howard E. Lomax, Elmer E. Reichard, ('92); Thomas W. Jenkins, George H. Van Gaasbeek, Percy G. Waller, ('93); Harry W. Luchsinger, John R. McElroy, ('94); Archibold Buchanan, Charles S. Butler, Charles Gartner, Arthur M. Johnson, Everett S. Kinloch, Edward N. K. Mears, Howard W. Murphy, Charles L. Myers, Reed A. Sauter, ('95); Garrett V. Johnson, John C. Sharkey, ('96); H. Judson Lipes, ('97); Eugene E. Hinman, Walter H. Sanford, G. Scott Towne, Merritt E. Van Aernem, ('99); Arthur J. Bedell, ('01); Stillman S. Ham, ('02); Donald Boyd, Frank Keator, James N. Vander Veer, ('03); Earl C. Haviland, ('04); Kenneth D. Blackfan, James M. Boddy, Homer A.

Bushnell, George Morris Casey, Arthur P. Clark, Kenn R. Coffin, John H. F. Coughlin, Miles J. Cornthwaite, Walter A. Cowell, Orrel C. Curtis, Theodore D. Dockstader, Patrick J. Donahoe, Thomas J. Flynn, Perlia E. Garlock, William J. Garvey, Charles E. Green, Fred F. Gremore, C. W. Louis Hacker, Walter Ennis Hays, Chester A. Hemstreet, Thurman A. Hull, Lemuel R. Hurlburt, Matthew J. Keough, Oscar F. Larson, Edward Miltimore, Francis J. Noonan, George W. Papen, Jr., Henry S. Rowe, Jr., Harry Rulison, Frank G. Schaible, John R. Schermerhorn, Frederick F. Schirck, Francis J. Scott, Benjamin F. Seaman, Hamilton Munn Southworth, Charles W. Stratton, Charles C. Sweet, James H. Van Buren, Edward H. Vines, George Walrath, Alfred L. Warner, Roscoe Waterbury, James W. White, ('05).

On motion of Dr. Mac Farlane, the reading of the minutes of the last annual meeting was dispensed with and the minutes were approved as printed in ALBANY MEDICAL ANNALS.

The President introduced Professor Hermon C. Gordinier, who delivered the following address of welcome on behalf of the faculty:

ADDRESS OF WELCOME.

Mr. President and Fellows of the Alumni Association:

On behalf of your brethren, the Faculty, I have the pleasure of welcoming you to this, the thirty-second annual reunion of the Alumni Association. Your Alma Mater feels highly honored by the presence within the confines of these old college walls of so many of her noble sons, and extends to you all the right hand of fellowship and a most hearty welcome, and trusts that you will all enjoy the pleasures of this reunion in making new friendships and in renewing old acquaintances and associations, returning to your homes much refreshed and full of love and enthusiasm for her. That you have profited in the past by these pilgrimages is in evidence by your presence to-day. Your Alma Mater is fully cognizant of the sacrifices which each of you have made in relinquishing your arduous and exacting professional duties to return once more to the college which so inspired you at the beginning of your medical career.

The growth of this Association has of necessity been very rapid. If I am not mistaken it has at present over fifteen hundred members, scattered about the various States of our republic, most of them belong to that noble band of professional workers, "the general practitioner," whom I contend in their daily round of seeing and treat-

ing patients, in observing and combating diseases, are as truly scientific workers in advancing the progress of medical knowledge, as are those who are called the prosecutors of original research. A few are doing very creditable laboratory and experimental work, others have achieved famous reputations in the various specialties, while still others occupy positions of trust in many of our hospitals and other institutions.

I cannot refrain mentioning at this juncture, the growth of our official organ, the ALBANY MEDICAL ANNALS. It has made rapid strides forward and now occupies a high position among the periodicals of our country. This medical monthly has within the past five years more than doubled its readable text, consisting as it does of original articles, reports of interesting cases and the report of much original research work. In addition the ANNALS contains many well selected reviews of articles taken from a number of our foremost medical journals, together with hospital reports and reports of the Alumni and other society meetings. The Faculty and Alumni should feel very proud of the progress which the ANNALS has made, and should assist it in every way possible, to maintain the high position which it now occupies, by subscriptions, by reporting interesting cases and contributing original articles.

The class of young gentlemen which are presented to you for your consideration this morning for membership in this Association, have done excellent work throughout their college career, and have shown an enthusiasm in their work never surpassed by any previous class. They have completed in a most satisfactory manner the prescribed course of study and passed very creditable examinations; accordingly they will receive from the Board of Trustees this day their medical degrees. We therefore recommend them to you, knowing that they are thoroughly equipped and may be permitted to enter your ranks with the assurance that they will be active and enthusiastic workers, thus honoring and strengthening them.

To you young gentlemen just about to enter the threshold of your professional career I have but a few words to say. You have spent four years in continuous hard medical work in preparation for this event; you have had splendid opportunities and you have used them to good advantage; you are certainly thoroughly well equipped. It is the duty and privilege of each one of you, not only to use the knowledge which you have received from others, but to carry the torch in your own hands and add something new to medicine, thus relieving or preventing disease and honoring this Association and your Alma Mater. Remember that severe intellectual exertion, careful analysis of facts, enthusiasm in your work, truthfulness in your observations and never failing persistence is the price which must be paid for success in medicine.

It seems fitting here to briefly emphasize some of the many advantages offered by the Albany Medical College. It is an indisputable fact that Albany has been and is becoming more a medical centre. Its hospitals, laboratories and dispensaries attract a large number of

patients and offer unsurpassed clinical advantages. Owing to the fact that most of the members of the faculty are connected with these various institutions, this vast clinical material is at the disposal of our students. Of the many advantages the following three appeal to me:

First. Individual attention by the members of the teaching body, to become acquainted and deeply interested in the work and welfare of each student and to properly place and direct him on the threshold of his student career, along the lines best adapted for him in the future, is an advantage eagerly to be sought after by any institution of learning. This advantage is placed first because our students recognize the great good that comes from an actual working knowledge on the part of the various members of the faculty, of the exact amount of work that is being done, and just how well. The students are constantly encouraged in their work, and those that lag are stimulated to better effort.

Second. The clinical advantages. One great advance which our school has made during the past decade in the teaching of medicine and surgery has been in dropping so far as possible didactic lectures, and substituting for them clinical lectures, practical class demonstrations, and bedside teaching. The great variety of clinical material offered by the Albany, St. Peter's, Child's, and County Hospitals as well as St. Margaret's Home, the Orphan Asylum, the Obstetrical Guild and the Dispensaries affords excellent opportunities for the teaching of clinical medicine, surgery and the various spécialties. For the purpose of utilizing the out-door patients at the hospitals and dispensaries, it has been our custom for several years to divide the third and fourth year classes into small groups, so as to enable each student to become thoroughly perfected in the method of case taking, in the use of instruments of precision and in the diagnosis and treatment of disease, all under the guidance of skilled instructors. The most valuable method of clinical teaching however, long ago inaugurated by Professor Hun, is that at the bedside. Here the student is enabled to become thoroughly familiar with most of the acute and chronic diseases. Two students are assigned to a case which they critically examine, make the diagnosis and suggest a line of treatment. The case is taken as a text for a clinical lecture and in addition the differential diagnosis and treatment are more fully discussed.

A new clinical feature developed two or three years ago by Dr. Mosher was the establishment of the bedside method of teaching insanity. This was made possible by the erection of Pavilion F, an extremely valuable addition to the Albany Hospital. Cases are assigned to groups of two or three students, who, following a carefully prepared scheme, make examinations of the mental symptoms and are obliged before the assembled class to discuss the case and defend the diagnosis. Dr. Mosher states that the work is essentially practical and is arranged to throw light upon facts met by the physician in the routine of general practice. The opportunities thus

offered for the observation of mental cases during the entire attack, have been rarely, if ever before presented to undergraduate students.

A distinct advantage in obstetrical teaching introduced three years ago through the labors of our professor of clinical obstetrics, Dr. Lipes, was the establishment of a special obstetrical department of the Albany Guild. This enables each student to receive a most excellent touch course and to attend at least two cases of labor each year. The growth of this department has been very rapid, and we are sure that the teaching of obstetrics at the bedside will be a valuable and permanent addition to the college curriculum. Time will not permit more than a passing notice of the methods in use in teaching the various specialties. While it is true as a preliminary, didactic lectures are given, the work is essentially practical, and is conducted at the out-door departments of the various hospitals and dispensaries. The clinical material is abundant and the classes are divided into small groups so that each student receives from the head of each department individual instruction in the use of instruments, and in the diagnosis and treatment of all of the more common diseases.

One real advance made in the department of specialties within the past few years has been in the teaching of clinical pediatrics. Through the efforts of Dr. Shaw this most important branch has been developed, so that at present this subject is taught to our students in a most thorough and practical manner, at the Child's Hospital, the Orphan Asylum, St. Margaret's Home and the Lathrop Memorial.

Third. Our Laboratory Advantages. The gift of the Bender Hygienic Laboratory through the munificence of the late Matthew Bender has opened to our students a third great advantage, namely, magnificent opportunities for the study of histology, pathology and clinical microscopy. In addition to the regular curriculum the director, Dr. Pearce, invites the students during the summer months not only to do advanced work in these branches, but also gives them abundant opportunities to pursue special lines of research work. This training is not only valuable to sharpen the powers of observation but it inculcates a spirit of true scientific enquiry, invaluable to the student of medicine.

In conclusion I must direct your attention to the one great growing need of our institution, which we cannot afford to overlook, and one which we hope will soon be forthcoming. I refer to a special laboratory building thoroughly well equipped and endowed, for the purposes of teaching experimental physiology and physiological chemistry; the latter is not at present taught, while experimental physiology, owing to inadequate apparatus and lack of laboratory room, is insufficiently taught. In such a laboratory building, facilities might well be included for the study of general and comparative anatomy. With these additions our teaching facilities would be complete.

On motion of Dr. T. D. Crothers, the thanks of the Association were tendered Professor Gordinier for his address and a copy was requested for publication.

Dr. Mark M. Lown then moved that the President appoint a committee of five to nominate officers for the ensuing year. Carried. The President appointed as such committee: Drs. Mark M. Lown ('77), Earl D. Fuller ('78), Thomas Wilson ('74), Daniel C. Case ('70) and John E. Sadlier ('87). The committee retired.

The Recording Secretary presented the

REPORT OF THE EXECUTIVE COMMITTEE AND RECORDING
SECRETARY.

Two meetings of the Executive Committee have been held during the year.

At the first meeting, held May 25, 1904, the Recording Secretary presented the minutes of the thirty-first annual meeting of the Association, including an account of the Commencement Exercises, and on motion this manuscript was referred back to the Recording Secretary to be published in the usual way, and the Treasurer was authorized to meet the expense of reprints, and envelopes for mailing, and of the Treasurer's blanks.

Dr. Tucker, of the Alumni Banquet Committee, presented a report, showing a deficit of \$78.03, which has been paid by the college faculty.

Dr. Tucker presented the following resolution, which had been adopted unanimously at the Alumni dinner, and on motion the resolution was adopted by the Executive Committee as follows:

Resolved, That the Executive Committee be authorized to appoint a Committee of Five, two of whom shall be from their own number and three from the Association at large, to act in conjunction with the trustees and faculty of the college, with a view to soliciting subscriptions in the manner indicated in the minutes and resolution adopted by the faculty April 29, 1904.

The following named members of the Association were then unanimously chosen to serve upon the special committee: Drs. William J. Nellis, '79; Thomas Wilson, '74; William H. Thomson, '59; Walter W. Scofield, '82, and Earl B. Fuller, '82.

The Treasurer stated that the balance in the treasury amounted to \$81.89.

The second meeting of the Executive Committee was held February 18, 1905. Arrangements for Alumni Day were discussed and a committee appointed. On motion, the faculty of the college were invited to participate and appoint a representative to deliver an address of welcome at the opening of the annual meeting. The Corresponding Secretary was authorized to have the usual notices printed and distributed during the meeting. It was also decided to arrange for the Alumni dinner on the evening of Commencement Day.

On motion of Dr. Crothers the report was accepted and ordered entered upon the minutes.

The Treasurer, Dr. Robert Babcock, presented his report for the year as follows:

TREASURER'S REPORT.

CR.

Balance on hand May 1, 1904.....	\$20 79
Dues received during year 1904.....	96 00
Total	\$116 79

DR.

Various bills paid for which vouchers are presented	\$81 47
Balance on hand May 1, 1905.....	\$35 32
College Building Fund.....	\$109 92
[Signed]	ROBERT BABCOCK, <i>Treasurer.</i>

On motion of Dr. Waller, the Treasurer's report was referred to an auditing committee, consisting of Drs. Waller, L. B. Rulison and Traver, who subsequently reported it correct. The report of the Auditing Committee was received and the committee discharged, and the report of the Treasurer was accepted and ordered paced on file.

The President's address being the next order of business, Dr. Walter W. Scofield, an ex-President of the Association, was called to the chair, and President Cotter delivered the following address:

PRESIDENT COTTER'S ADDRESS.

THE PHYSICIAN AS A TEACHER.

"Of all good things in this good world around us,
The one most abundantly furnished and found us,
And which, for that reason, we care least about,
And can best spare our friends, is good counsel, no doubt."

In giving counsel to the young men who have finished their academic courses, and who, by this time, should have decided what pursuits in life they intend to follow, I will limit myself to those who intend to study medicine. And here permit me to add a few words in regard to the university.

I think that the candidate for the degree of M. D., who enters college on the same footing with the candidate for the degree of A. B. or B. S., and spends four years in the study of medicine, should receive the same honor from the university, and be considered just as much a university man, as his colleague who spends only the same length of time in winning some other degree. But, at present, such is not the case, notwithstanding the fact that the medical student is required to devote more than twice the number of hours each week to his work.

The majority of medical aspirants come from the families of those in moderate circumstances, who can ill afford a useless expenditure of either time or money; and why they should be expected to take a course in civil engineering and the great classics any more than the civil engineer should take a course in medicine, in order that he may be properly equipped for his work, has not been elucidated. While the physician cannot know too much, I strongly doubt the wisdom of giving too much time to too numerous subjects having no bearing upon his life work. Life, all teachers tell us, is too short for one mind to master even one art, like medicine, and master it thoroughly in all its branches; therefore, in my opinion, it is better for the student of medicine to direct his studies along those lines which will have some bearing upon his after work. For instance, would not a year in binomics, or with the microscope, be more instructive than a year in Liberal Arts, and perhaps broaden his mind just as much?

The primary and most important objection to the long preparatory course is time. In taking a university course, the would-be medical student spends four years in doing work that is foreign to his life-work, and four years is about one-seventh of the average time he will have to devote to his professional life. This, however, does not apply to teachers, experimenters, or those who have wealth and leisure at their command, who may be pursuing the higher branches for love of them or to gain fame and become truly great, and are not looking to their practice for support. But if we were to select our doctors from among these classes, we should not have one doctor to every fifty thousand inhabitants.

As I have before stated, the majority of aspirants to the title of M. D. come from the families of those in moderate circumstances *e. g.*, we will take the son of the farmer. His means will ill afford a college course; for the two thousand dollars, as a minimum, spent in getting his degree before beginning the study of medicine would perhaps be more than the average value of the farms in any county in the State of New York. Therefore, under present conditions, it would seem as if the candidate for Esculapian honors was placed at a direct disadvantage with men of the same calibre who have chosen other vocations, many of which are more remunerative. To illustrate: the student of law or the trade apprentice is given some compensation for his services while he is preparing for his profession or working at his trade, while the student of medicine is obliged, not only to

devote his whole time to his studies, but to pay for his tuition as well; and the amount of wealth that the average physician who devotes his life to the practice of medicine and surgery can accumulate, in comparison with the amount accumulated by those who follow other callings, does not warrant this demand.

Charles F. Thwing, LL. D., in writing for the *North American Review* for February, 1905, says that the average amount of time given to study in the university is "discreditably small," and draws his conclusions from the reports of committees appointed by the universities themselves. These reports show that the maximum amount of work performed by the students for different degrees is twenty-six hours per week, and many do not exceed twelve. This includes the time given to study as well as the time spent in the presence of the instructors. If this be true—and I presume it is—I congratulate the university man who, after spending four years in comparative idleness, has sufficient ambition to go to work and win the degree of M. D., which means at least from fifty to sixty hours per week of hard study.

At the last Commencement, President Eliot said that Harvard was the first university in the land, and they meant it should remain so. Now, if Harvard is the first, and intends to maintain that position on the amount of time that she devotes to study each day, it would seem that for a young man of eighteen or twenty years of age, the temptations to idleness would prove injurious, and I doubt very much whether any body of men of any age—let alone young men of twenty, who are said to be only half-civilized, or barbarians—can keep out of mischief when working only three hours out of twenty-four.

At the present time, when the power of wealth is so great, when the accumulation of money means so much to man, and he who succeeds in attaining great wealth is able to command so prominent a position in the world, it behooves us to see that those who are to take our places in the medical profession are not obliged to spend too much time and means in the preparation to earn a livelihood; and to this end we should direct our efforts.

"I long have thought, my youthfu' friends,
Of something to have sent you,
Tho' it should serve nae ither end
Than just a kind memento;
But how the subject—theme may gang,
Let time and chance determine;
Perhaps it may turn out a sang,
Perhaps turn out a sermon."

It is wise of the State to require the candidate for the degree of M. D. to be of good moral character. Not only should every physician be of good moral character himself, but he should be a teacher of morals as well; for it is just as important for one to avoid immorality, if he wishes health of both mind and body, as it is to avoid any other

source of disease. In fact, if we would make the next generation healthier than the present, one of the most important adjuncts and one of the largest fields of preventive measures—or rather preventing disease—lies along these lines.

The Church, ever watchful for the welfare of her children, has been from her earliest times preaching against immorality, and has had, for the past fifty years, a new feature of it to contend with in the matter of the low birth rate among her members, small families interfering greatly with the natural increase of her membership; and if families are growing smaller, it is not because there is less natural fruitfulness. If births are not keeping pace with deaths, it is not because men and women are attracted by a life of voluntary chastity, or deeply in love with the evangelical counsels, but because the designs of God are frustrated, and a period of moral decay has begun, people saying to their Creator, "We will embrace the pleasure, but we reject the duty you impose upon us."

In the human struggle it is the morally fittest that survive, and they who place self-indulgence before duty will continue to grow more insignificant, and will finally disappear. It is to be hoped that they will either reform or disappear before their example shall have corrupted the entire population, and made it physically, mentally, and morally decadent.

Consider, in the first place, the direct influence of the small family upon the parents themselves. The question of morals may be passed over by us, as physicians. That which concerns us most is the health of our people; and we all know that the means by which the limitation of offspring is secured are all physically injurious to those who employ them—injurious not only to the parent, but to the few children born to the parents. To physicians, the alarm on account of the small family means enervating self-indulgence; and this means not only a decline morally and in the number, but a corresponding decline in the physical qualities of our people; for when the emotional and animal appetites are indulged too freely, the race must be weakened physically and mentally, and, in this way, less able to resist disease. Every physician knows by experience that there cannot be a deterioration of the moral and emotional natures without destroying the subject's power of resisting disease, and especially is this true of woman when she denies herself the privilege of motherhood or deliberately curtails its exercise, by which act she brings about disease and suffering, and transmits to the few offspring that she allows herself to bear a nervous system unable to resist disease in any form.

Of late the State has begun to realize that it will soon become necessary to take measures to check the tendency towards "race suicide," as our worthy President terms it, which expression, as well as those who agree with the views of the President, has been much ridiculed; but a majority of right-minded persons are willing to admit that there is, in what the phrase stigmatizes, an imminent danger to society. It seems that the Church has failed to check the evil. The

fear of future punishment does not seem strong enough to control it, and I doubt very much if the State will be able to check it to any great extent, other governments having tried and failed, notably France; but for the past twenty years the decrease in France has been only fourteen per cent., while in England it has been seventeen per cent. The danger to the State is great, for, according to the statistics of New England, the death exceed the birth rate of the native born citizens, and this same condition exists in the cities of our own State.

Since both State and clergy have failed in their endeavors in this direction, we, as the guardians of the health of the people, should make it our duty to lend our assistance, by pointing out and teaching the evil effects of this condition upon the mind and body. The work of the physician need have no bearing upon the large or small family; let it be to teach all who come under his care the evils of unnatural living, especially the unnatural union of the sexes. Teach the married women that to bear children is what the Creator intended them to do as their part in the creation, and that if they desire health and happiness, they must fulfill the laws of nature, for none break her laws without a penalty. Teach them that a great many of the ills to which their sex is heir are caused by unnatural living; that it is far more injurious to their health to live in an unnatural manner than it is to bear children; that the union of the sexes should be natural and complete, and that for the health and happiness of both their husbands and themselves, fecundation should not be interfered with in any way.

Nature will not permit us to interfere with her along these lines, and if we attempt it, our punishment will come, and it will come in such a manner as to wring the very fibres of humanity. It will come in the form of ruined health and undermined constitutions, which will invoke in vain our skill as physicians, and what source of healing will avail husband and wife, when, bereft in age, they sit lonely by the fireside, with no children to comfort them, and realize that they have wasted their years and substance, and that life to them has been a failure?

Many writers speak of the physical decay of women. I do not agree with them. I believe that one sex has not suffered more than the other, and that the women of to-day are as capable of bearing their share of the care and maintenance of a family as the men. Some writers claim that this so-called physical decay is due to higher education. This, I believe, is a mistake. For if we compare college women with the young women employed in shops and stores, we find that the former devote less than thirty hours per week, perhaps, to study. They live in well-aired apartments, have plenty of nourishing food, good clothing, and spend many hours each day in the open air, while the latter are required to work from fifty to sixty hours per week, and often have to lend a helping hand at home. Frequently their food and clothing are inferior, while their outdoor exercise consists of the walk to and from work. Notwithstanding these facts, the latter give a far higher birth rate than the former, as was proved by a New York

paper, which recently caused a great sensation in the form of an article bearing the head-lines, "What Would Become of the Republic if Fifth Avenue Were Its Only Hope?" This article gave a canvass of the number of children under ten years of age born within a year in three hundred families living on Fifth Avenue, and the same statistics in the case of three hundred families living on Cherry Hill, noted for its mixture of all classes and conditions of society. The total number of children under ten years of age among the Fifth Avenue three hundred was ninety-one against six hundred and sixty on Cherry Hill. The total number *born* to Fifth Avenue during the previous year was six against one hundred and eleven for Cherry Hill.

It may be that those young women who are incapable of performing their college work, or any other task, on account of being too weak and nervous, have inherited both weakness and nervousness from their parents. Just think what the nervous system of the young man or the young woman must be, who has been an *accident*—so to speak; whose parents, while seeking to gratify the passion which was given them for the purpose of increasing the race, strive in every way to prevent the result which the Creator intended should be brought about by the union of the sexes! They resort to every means in their power to prevent fecundation—from onanism in all its forms to producing abortion after fecundation has taken place. What then can be the effect upon the child, whose mother has been taught from maturity to look upon maternity with dread, because of the sufferings which she must undergo, but a weakened, nervous system? Every physician is a witness to the fact that those married women who suffer from dysmenorrhea and other uterine troubles each period endure more real pain than would be caused by a natural labor, and very frequently their troubles are brought about by their unwillingness to perform their duty as wives and mothers.

But it may be asked, is it true that woman alone is to blame for this state of affairs? Judging by the attitude which our respected President takes in his addresses at Mothers' Meetings, he evidently thinks it is. The facts in the case, however, do not warrant this belief. How often the husband seeks advice from his physician as to how he shall prevent fecundation and, at the same time, gratify this supposed necessity of his nature, only physicians themselves know. Often he wishes a small family, or no family at all, and, knowing that this is wrong, Adam-like, he points to the woman, and says, "It is her fault," when if we mortals but knew, perhaps man was the Satan that tempted our first mother, and she, woman-like, bore the blame. And so on down through the ages, man has always written the story, and woman has been blamed for the sins and shortcomings of both sexes.

It is time that woman followed the instincts of the worm, and "turned" upon man, who, it cannot be denied, is the author of much misery. He should be made to understand that as much should be demanded of him in the way of moral purity as he demands of the woman. When the standard of morality is the same for both sexes—

as I believe it should be—the divorce evil, which at the present time is receiving so much attention, will be in great measure remedied. It will be a hopeful sign for future generations when young men are taught that sexual union is not necessary to health. Many of our ablest thinkers and writers agree that the best work is done by those who lead continent lives, and that, in all cases, passion should serve reason.

From our college women, with their well-trained minds and bodies, we have a right to expect much. If these young women are properly trained, they will know that childbirth is a physiological, and not a pathological, condition, and that, for the sake of human progress, every parent should lose sight of selfish interest, and strive for all conditions that will favor the highest good of offspring, for "To be well-born is the right of every child."

To you, young men, we bid a hearty welcome; and although the bed is already full, we will crowd closer together and make room for you. The amount of room which you will occupy will depend upon yourselves and your ability to do good work, as well as your willingness to pay strict attention to your work; for, while but few men can command success, you can do better: you can deserve it.

If you win a first place in the profession, you will find it necessary to practice much self-denial. You must be ready, day and night, to answer any call that may come to you; and when you are not visiting your patients, you will be expected to remain in your office and wait patiently, for experience has proved that your would-be patrons will not excuse absence therefrom on any other business than that of attending to the sick. And this is right; for in times of hurried calls, people come to you, thinking that the older and busier practitioner cannot be found, or they do not like to disturb him at unseasonable hours, and for this reason, they honor you with a call, and are much disappointed if you are not ready to respond. And if they learn (as they surely will) that you were out on pleasure bent, you will be surprised to learn how quickly the news will travel, to the effect that you neglect your business, and you will not be readily excused for this negligence, for such it will be considered. If you are ambitious to become successful, let your master-word be work; and it goes without saying that, in order to attain this object, you must forego many pleasures.

It is customary to tell the young physician just starting out in life that he must be charitable for "sweet charity's sake;" that he belongs to a noble profession, since "medicine of all arts is the most noble;" that his fee should be a secondary consideration; that he must be lenient with the erring poor; and that in this way, he will hold an honorable position among men, and a multitude of admiring friends will consider his career a blessing to mankind.

All this sounds well, and looks well, too, in print, but it buys no bread; neither will it clothe the physician and his family, nor will it place him in a position in society which those loudest in his praise declare he should occupy. To have this idea continue to go out into the world

in the future as it has in the past will injure us more and more every year, until finally but few will consider it necessary to pay the doctor at all.

There is a business side to this question, as well as a philanthropic, and in the past the business side has been neglected, to the physicians' disadvantage. We have the reputation of being poor business men, and it seems to me that those among us who are may attribute the cause, in a measure, to the advice heretofore given us. In our zeal to make our profession an ideal one, we have become poor financiers. I believe it is the duty of the physician to give to charity, to the poor, to every undertaking for uplifting and bettering mankind physically, mentally, and morally,—and we cannot assist the one, but we will improve the other; but as man naturally depends for his support on whatever occupation he follows, we as physicians should expect to be paid for our services, the same as the lawyer, the merchant, and all other people who live by their vocations. As the poet expresses it, we must, in order

"To catch dame Fortune's golden smile
Assiduous wait upon her,
And gather gear by every wile
That's justified by honor.
Not for to hide it in a hedge,
Nor for a train attendant,
But for the glorious privilege
Of being independent."

Always bear in mind the fact that no one can live your life but yourself. There will be many ready to help you with suggestions in regard to your work and plans, but when you get down to rock-bottom, you will have to figure the matter out for yourself and by yourself. Therefore, cultivate self-reliance and self-esteem. Follow the dictates of your own conscience. Mind your own business. Look out for your own rights without trespassing upon the rights and privileges of others. Be kind, be thoughtful, be honest. Pay your just debts. Treat your neighboring physician fairly and with courtesy. Do not start out on your professional career with the idea that all the physicians who graduated a few years before yourself are old fogies and behind the times. Remember that all the knowledge of which you are the proud possessors was imparted to you by teachers probably older than the physicians whom you will meet in your practice, and that only a few of those in actual practice are not keeping abreast of the times.

At the present time, with the facilities afforded by the post-graduate schools, the medical societies, and the great variety of medical journals published, it is an easy matter for any physician to acquaint himself with all the new ideas that are of value. More than one young man has so antagonized his fellows with his "up-to-date" ideas that he has been simply laughed out of the neighborhood. As a rule,

people will not permit a stranger to belittle the work of the physician whom they have had confidence in for years.

Especially would I counsel you neither to do work for cheap insurance societies nor for those societies which pay a small amount per capita, with a view on your part of obtaining business. If you do this class of work, you will soon come to be known as the "cheap doctor," and thereby be placed in many unpleasant positions.

Do not try to carry out more style than your means will allow. Be careful not to talk about the private affairs of your patients. Since those things which are sacred are imparted to sacred persons only, show to the world that its secrets are safe in the keeping of your profession. In short,

"To thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man."

The members of the Class of 1905 were present in a body, and rose as the President addressed them at the conclusion of his address, and received them into membership in the Association.

Dr. Crothers moved a vote of thanks to the President for his interesting address, a copy of which he was requested to furnish for publication in the ALBANY MEDICAL ANNALS. Ex-President Scofield put the motion to a vote, and declared it unanimously carried.

President Cotter then resumed the chair.

The report of the Historian of the Association, Dr. Hinman, was then presented, and ordered entered on the minutes.

REPORT OF THE HISTORIAN, E. E. HINMAN, M. D.

Fellow Alumni:

The record of another year has been added to the honored history of our college, and another anniversary has brought her sons together to refresh the memories of the old days, to hold again the hand of those with whom we sat in these same halls as students, and to bid welcome to our illustrious ranks the men who to-day will receive their diplomas. And brethren of the class of 1905, let me beg that you will go forth to-day with a firm determination to do your part in sustaining the high standard that the alumni of this college have always maintained, for upon your individual efforts depends in no small measure the fame of our common Alma Mater.

It is again with a pleasure not to be adequately expressed in words that I present to you the histories of five classes, '55, '65, '75, '85, '95. These histories will be found in their respective cases in the library

and will be printed in full as usual in the proceedings, a copy of which will be sent to each of our number. I am indebted to the earnest co-operation of the several class historians for a large part of the records.

I have received the following letter from Dr. Jared Bassett, which I take pleasure in presenting:

EVANSTON, ILL., *April 24, 1905.*

DR. E. E. HINMAN:

Your kind note of the 21st inst. is received, requesting me, as the first graduate of the Albany Medical College, to write a few words of greeting to take before our Alumni Association.

I probably could not put more into small compass than by assuring the Alumni Association that the diploma issued to Jared Bassett by the Albany Medical College, in the Spring of 1839, is now carefully preserved, not a letter blurred.

With kind regards, etc.,

JARED BASSETT,

Age ninety-one years and three months.

During the past year the following reports have come to us of the summons that have removed from the scenes of their labors twenty-three of our number. I ask that I be notified of any that I may have omitted.

NECROLOGY.

- Dr. John H. Turner ('45), at Berlin, Wis., May 26, 1904, æt. 85.
 Robert Morris ('46), at Ogdensburg, N. Y., November 14, 1904.
 Josiah H. Helmer ('47), at Theresa, N. Y., August 20, 1904.
 George Bullard ('53), at Blackstone, Mass., March 25, 1905.
 James A. Mowris ('53), at LaFayette, N. Y., September 1, 1903, æt. 78.
 James E. Jones ('55), at Clayville, N. Y., December 25, 1904.
 John S. Adams ('55) at Calistoga, Cal., July 29, 1899.
 John W. Knight ('55), at Farmington, N. H., October 26, 1904.
 Lewis W. Sutherland ('55), at Pittsburg, Pa., November 12, 1904.
 Nelson Fanning ('59), at Catskill, N. Y., May 17, 1904, æt. 63.
 DeWitt C. Wade ('60), at Holly, Mich., November 4, 1904.
 Lyndhurst C. Dodge ('62), at Rouses Point, N. Y., August 12, 1904.
 John O'Flaherty ('64), at Hartford, Conn., July 31, 1904.
 John H. Dorn ('64), at London, England, June 17, 1904, æt. 62.
 David A. Barnum ('65), at Cassville, N. Y., January 1, 1905.
 Truman E. Parkman ('66), at Rock City Falls, N. Y., October 24, 1904.
 1904.
 Isaac C. Edson ('67), at Windsor, N. Y., February 20, 1905.
 William Purple ('75), at Albany, N. Y., May 25, 1904.
 Frank P. Blair ('77), at Olean, N. Y., May 23, 1904.
 David J. Fitzgerald ('84), at Glens Falls, N. Y., July 17, 1904, æt. 46.
 Charles L. Parker ('92), at Onondaga Hill, N. Y., May 23, 1904, æt. 47.

Augustus A. Guy ('93), at Harpursville, N. Y., March 30, 1904, æt. 44.
Patrick T. Markey ('93), at Schenectady, N. Y., February 22, 1905.
Fred Sauerbrie ('95), at Clarksville, N. Y., April 2, 1905, æt. 38.

Respectfully submitted,

EUGENE E. HINMAN,

Historian, A. A., A. M. C.

HISTORY OF THE CLASS OF 1855.

JOHN S. ADAMS. After graduating from the public schools of Vermont he entered the Albany Medical College, from which he was graduated in 1855. While at Albany, Dr. Adams was a favorite pupil of Dr. John Swinburne. Five years of practice in the hospitals of Troy undermined the health of Dr. Adams, and with his wife and son he went to California and settled in Alpine county. He located in Oakland in 1874 and resided there until the time of his death, July 29, 1899. He was the first physician to receive a certificate from the board of examiners of the Medical Society of the State of California. Dr. Adams' first wife died in 1885 and he had since remarried. He was a prominent member of the Alameda County Medical Society, which attended in a body the funeral of their deceased brother physician.

DAVID F. ALSDORF. Located in Corunna, Mich., in Spring of 1856. Was very successful in getting business, especially obstetrical. In 1862 was made examining surgeon under the state draft. Married in 1863. Was also pension examiner from 1862 until 1880, when he resigned and went to Lansing, Mich., and opened a drug store. Three years later he sold out and returned to Corunna. In 1892 located in Guthrie, O. T., for change of climate for his son. He returned to Corunna in 1898, leaving his son well and in business. Is now living in Guthrie, O. T., but is not practicing. Has been burned out three times and will not again fit up offices. Is 72 years old and in pretty good health.

HENRY E. BABCOCK writes: "Began practice in Clarksville, N. Y. Then went to Wayne county, N. Y., remaining there eight years. Since then I have resided at my present home, New London, N. Y., and have been in practice until three years ago. Am in poor health."

HERMAN A. BUCK. On graduating went to Marengo, Ill. Practiced there until the Civil War began, when I was commissioned Assistant Surgeon of the 15th Illinois Infantry. I served in the Army of the Tennessee and Cumberland at Fort Donaldson, Island No. 10, Pittsburg Landing, on hospital boats Desmond and Empress. Afterward was ordered to Washington, D. C., and appointed on staff of Surgeon-General Hammond. In February, 1863, was appointed Examining Surgeon for Pensions for Chicago and served as such until the formation of 141st Regiment of Infantry was formed at Elgin, Ill., when I was appointed its surgeon. Was later appointed surgeon of the 150th Illinois Infantry and served with it until the expiration of service, January 16, 1866. I saw service at the siege of Vicksburg and as Surgeon-in-Chief of Hospitals of Atlanta, Ga. I am enjoying very

good health for an octogenarian. Never use alcohol, tobacco or any narcotics.

THOMAS J. BARTON. Practiced nearly all of his life near Tivoli, N. Y., in which locality he was prominent in both medical and social circles. He was at one time coronor of Dutchess county and was serving as health officer at the time of his death. His funeral was held in the city of Hudson, N. Y., September 3, 1903, under the auspices of the Masonic fraternity. He never married.

REUBEN B. BURTON. Has practically retired from active practice at the age of 78. Has spent nearly all of the time in New York city, where he now resides. Has amassed something over \$45,000 and is able to report a list of over 7,000 confinements.

ELIAB W. CAPRON. Has largely given up general practice after a service of forty-five years. He is now engaged in growing oranges and pineapples at Lotus, Fla.

ROBERT F. CARR. Died at Argenta, Ill., March 13, 1893.

THOMAS H. CHAMBERS. Soon after graduating left New York for the West and located at Bloomington, Wis. Practiced there successfully until 1892, when failing health necessitated removal to Georgiana, Fla., his present residence. Is enjoying good health and regrets to say that the community is also.

ROBERT ORR CRAIG. In directory at Janesville, Minn. Did not respond to request for information.

HIRAM C. CUTLER. Died a few years ago somewhere in the far West, place and date unknown.

HAMILTON DEGRAW. Whereabouts never known.

DAVID F. DREW. Died at Lynn, Mass., at which place he practiced some time during the year 1886.

WM. H. DUTTON. Whereabouts never known.

ALEXANDER ENNIS. Graduated from Union College in 1850. Graduated from Albany Medical College with the class of 1855. Practiced two and one half years at Richford, N. Y., removed to Esperance, Schoharie county, N. Y., in 1859, remaining there until May, 1868; removed to Pattersonville, N. Y., and is still in practice in the latter place. Is a member of Schenectady County Medical Society, has served as coroner for four terms, and was health officer for the town of Rotterdam, N. Y., for a long number of years, terminating his service in that capacity in 1902. Was married in 1885, and after a period of forty-nine years of married life lost his wife by death a year ago. Remembers with a great deal of pleasure his experience in the Albany Medical College and with gratitude the labors of his old professors.

SOLOMON S. FORBES. Died at Milton, Fla., year unknown.

DANIEL GILLIS. Whereabouts never known.

JOSEPH C. GREENE. After graduation, began practice in Charlotte, Vt., where he remained for seven years. He then moved to Buffalo, N. Y., where he remained in the active practice of medicine until his death, January 3, 1899, at the age of 69 years. He was a member of the city, county and state medical societies and a 32d degree Mason.

HENRY S. HARRINGTON. No record. Was last known to be at Chenango Forks, N. Y. Does not appear in last directories.

JOSIAH HASBROUCK. Died at Port Ewan, N. Y., March 25, 1889, æt. 59.

JEROME B. HOLCOMB. Died at Newport, N. Y., January, 1903.

DANIEL J. HOSTETTER. Died at Decatur, Ill., August 12, 1858.

JOHN W. HURST. Whereabouts never known.

CHARLES K. IRWIN. Whereabouts never known.

LEONARD M. JOHNSON. He studied medicine under Dr. Daniels, of Union, N. Y., and after that entered the Medical College at Albany, N. Y., from which place he graduated in 1855. He first began the practice of medicine in New Ohio, Broome county, N. Y., and from there he removed to Berkshire, N. Y., where he remained but two years, when he moved to Brownville, Neb., where he had a brother living, but on the breaking out of the Civil War he returned East and entered the army as Assistant Surgeon of the 3d New York Volunteer Infantry. In 1863 he was promoted to surgeon, in which capacity he served until the hardships of army life had undermined his health to such an extent that he was obliged to resign. In August, 1864, after an examination by army surgeons appointed by the government, he received an honorable discharge. In January, 1865, he moved to Greene, Chenango county, N. Y., where he has since resided and practiced medicine until in October, 1902, his health gave out so for the past three years he has been unable to practice to any extent.

HENRY B. JOHNSON. Dead. No other record.

JAMES ELIAS JONES. Practiced at Clayville, N. Y., where he died December 25, 1904, æt. 73.

THOMAS J. KING. Died at Machias, N. Y., November 5, 1889, æt. 64.

JOHN W. KNIGHT. Died at Farmington, N. H., November 12, 1904.

BENJAMIN LEMON. After graduating, secured an appointment as interne at the Buffalo City Hospital. The following year he opened his office in the same city. In 1859, after having done considerable work as assistant to several prominent surgeons, went to Galveston, Texas, where he practiced twenty years. Was coroner of Welland county, Texas, in 1862. Afterward commissioned Surgeon of the 44th Welland Regiment Volunteer Militia. Was mayor of Thorold, Texas, in 1878. Is member of Dominion of Canada Medical Association, of the College of Physicians and Surgeons of Ontario and Quebec. Served as surgeon of a transatlantic line for one year to recover poor health. After leaving the sea service he again located in Buffalo, N. Y., where he has been most of the time since. Was elected president of Western New York Electric Medical Association in 1898.

JOHN LOW. Dead. No other record.

HENRY D. MANN. Dead. No other record.

JOHN D. McCONNELL. Whereabouts never known.

LEROY McLEAN. After graduating, served a term in the Albany Hospital. Then went to Marshall Infirmary, Troy, N. Y., for a term of service. At the outbreak of Civil War, was commissioned Surgeon of Second New York Volunteers and later of Twenty-fourth New

York Volunteer Infantry and surgeon with rank of colonel on the staff of Major-General Carr. Returning from the army he practiced surgery in Troy N. Y., with unusual success. At the time of his death was attending surgeon to the Troy Hospital, a member of the Rensselaer County Medical Society, Medical Society of the State of New York, American Medical Association, American Surgical Association, Loyal Legion and Army of the Potomac. His last illness began with cerebral embolism, in 1896, which resolved to some degree but returned in February, 1897, and he died April 23, 1897, æt. 66.

THOMAS L. MORGAN. Whereabouts never known.

GEORGE H. NEWCOMB. After graduating, practiced in Albany with his preceptor, Dr. Charles Devol, until 1862. He then entered the army as assistant surgeon 113th New York Volunteer Infantry (afterward Seventh Heavy Artillery), was soon made surgeon and served until July 3, 1865. He returned to Albany and practiced until his death, February 22, 1898. He never married.

MARION NASH. Last known to be in Martinsburgh, Lewis county, N. Y.

NELSON NEELEY. Whereabouts never known.

JOHN L. NIHILL. No record.

GILBERT E. PALEN. Practiced in Philadelphia, Pa., from 1877 to 1901. Previous record unknown. Was married. Died in Philadelphia, July 28, 1901.

WARREN W. PALMER. Last known at Keyport, N. J. Did not reply to request for information.

MOSES B. PARDEE. Died at South Norwalk, Conn., November 9, 1892, aged 72.

DANIEL PARDEE. Fulton, N. Y. Died August 25, 1891.

CHARLES A. PETERS. No record.

CHARLES RICHARDS. Died February 5, 1890.

WILLIAM H. RULISON. Died in United States Service, 1864.

EDWIN F. SILCOX. No record.

JULIUS A. SKILTON. No record.

JOHN A. SMITH. No record.

ARIE B. SNELL. No record.

LEWIS W. SUTHERLAND. Is still in practice at 6223 Pennsylvania avenue, Philadelphia, Pa.

ANDREW STAFFORD. Last known at Preston, Md. Did not respond to request for information.

CHARLES STARCK, Chicago, Ill.

STEPHEN VALENTINE. No record.

SOLOMON VAN ETEN. Died at Port Jervis, N. Y., July 7, 1894, aged 65.

C. H. VAUGHN. No record.

HAMILTON M. WEEDON. After graduating went to Key West and the Dry Tortugas to recover poor health. Then returned to Albany and served a term as interne at Albany Hospital. Again returned to Key West and assumed the post of surgeon to United States Marine Hospital there. Was also post physician and enjoyed a good city

practice. Served during Civil War as surgeon. Was attached to 4th Florida Regiment and later appointed to staff of General John C. Breckenridge and that of General William B. Bate as division surgeon. Shortly before close of war was ordered to Eufaula, Fla., in charge of hospitals. Was paroled at Macon, Ga., and returned to Eufaula, and married. Later combined a drug business with practice and was very successful for thirty years. Retired from all business ten years ago.

PETER S. WEIDMAN. Began practice at Wilseyville, N. Y. Developed a fair practice but the income was very meagre. Sold out and went West, locating at Marine, Ill., March 18, 1857. Remained there until March 18, 1898. Then located at Edwardsville, Ill., where he is now, doing only an office practice.

JARED P. WHEELER. After graduating went to Freeport, Ill., and remained there several years. He then returned to White Water, Wis., and there enlisted as assistant surgeon in 24th Wisconsin Regiment and served until the close of the war. At the close of the war he returned to Brighton, N. Y., where he resided until his death, February 27, 1901. Married in 1855 and again in 1877.

J. RALSEY WHITE. No record.

STEPHEN WRIGHT. No record.

DANIEL S. YOUNG. First located in Cincinnati, O., where he became prominent as a surgeon. During the Civil War he served as surgeon with Generals Thomas and Rosecrans and was with General Sherman on his march to the sea. In 1863 returned to New York and married. At the close of the war he returned to Cincinnati, where his wife died. He never again married. He became noted not only for his professional skill but also as a botanist and a manufacturer of violins. His work as an etcher secured several awards from European art academies. He died at Cincinnati, February 20, 1902, after a long illness.

Respectfully submitted,

ALEXANDER ENNIS, *Historian*.

HISTORY OF THE CLASS OF 1865.

DOUGLAS AYRES, of Fort Plain, N. Y., after graduating in 1865, entered into partnership with his father at Fort Plain, N. Y. His first course of lectures at Albany was in 1861. He returned in '62 and '63, then went back to assist his father, and finally graduated in 1865, having taken four courses of lectures, and in the mean time assisting his father in active practice. He has been in his present location over forty years, as a partner succeeding his father, after his death. In 1898, he married Miss A. C. Marston, of Minneapolis, Minn. He has one child, a boy. Dr. Ayres has held very prominent positions in several medical societies. He was president of the State Medical Society of the State of New York and the county and district societies in which he lives. He is a warden in the Episcopal church and is a very influential, prominent man in his community. Dr. Ayres has

contributed many valuable papers to different societies, and is recognized as a progressive student, retaining all his early interest in the science and practice of medicine. Some of his papers have been republished and attracted much attention. He is a member of the American Medical Association and frequently attends its meetings and contributes of his experience.

D. S. ALLEN. After graduation went to Michigan and practiced until 1870, then returned to Seneca, N. Y., where he has been located until the present time. He is married and has one child; is a member of the Board of Examining Surgeons for Pensions and has been health officer of the town since 1877. The doctor is a country physician who has been prosperous and successful.

C. J. BACON. Began practice at Fulton, N. Y., where he is at present. He married Miss M. J. March, a niece of Professor Alden March. They have one daughter. The doctor has been very successful, both professionally and financially. He is a member of the American Medical Association, the New York State Medical Society, the Syracuse Academy of Medicine, and ex-president of the Oswego County Medical Society, and consulting physician of the Oswego Hospital. He is a member of the Methodist church, a Mason and a prominent sportsman in the North Woods. He has held many offices and is recognized as one of the leading and most prominent medical men in his county.

REUBEN BARNEY, of Chillicothe, Mo. After graduating went into the army as assistant surgeon. After serving in the hospitals at Cincinnati and Louisville, was discharged, and, in 1868, located at Chillicothe, Mo. Soon after he married Miss Prindle in Manchester, Vt. Dr. Barney was a member of the Episcopal church and appears to have taken a very prominent position in the Masonic world. He was a 32d degree Mason at his death and had held for many years all the important offices in the Commandery, Scottish Rite and other orders of masonry. He was a president of the board of education of the city, county and district medical society, a railroad surgeon, and an examining surgeon for pensions. He died July 15th, 1903, of cerebral hemorrhage. His wife and family survive him.

D. A. BARNUM, of Cassville, N. Y., after a period of preliminary training and study was licensed to practice by the New York State Medical Society, and went to the front as assistant surgeon in the 16th New York Heavy Artillery. After seeing some service about Richmond he was discharged, in August, 1865, going directly to the Albany Medical College, from which he graduated the same year. He then returned to Cassville, his native place, where he remained up to the time of his death, January 2, 1905. He was a successful practitioner, having a large business and circle of acquaintances. He was a member of the Oneida County Medical Society and a fellow of the New York State Medical Society, and a consulting physician on the medical staff of the Faxon Hospital, of Utica, N. Y. He was married in 1876 to Miss C. Rhodes, of Oswego, N. Y., who survives him. The doctor was prominent in politics and held several responsible positions in Oneida county. His death was the result of endocarditis.

J. F. BARNARD died of typhoid fever in 1867. There is no record of where he located or whether he commenced practice, and I have no trace of the place of his death.

IRA D. BROWN returned to his native place, Weedsport, N. Y., after graduation and continued practicing medicine, and doing editorial work until his death, June 23d, 1899, aged 68. Dr. Brown was married before graduation and was actively engaged in politics, and spent most of his winters in Albany, reporting legislative news. He was recognized as a good physician and an excellent, conscientious man, very deeply interested in any case he took hold of, and thoroughly conscientious and honest. He will be remembered by all the graduates as the essayist, whose work attracted more attention on Commencement Day than any other.

EDWIN BARNES, who was born in Troy, N. Y., after one course of lectures at the Albany Medical College, entered the army as medical cadet. In 1864, he was transferred to the Ira Harris General Hospital at Albany, and while there completed his second course and graduated in 1865. The next year he was mustered out and began active practice at Pleasant Plains, Dutchess county, N. Y. He remained here until his death, January 22, 1904. Dr. Barnes was a very successful practitioner and a member of the county and state medical societies. He was president of the Dutchess County Medical Society, and vice-president of the New York State Medical Association, and was very active in promoting scientific medicine. Dr. Barnes was married in 1866 to Miss N. Armstrong, who survives him, with two children, a son and daughter. He was a very hard working man and was active up to the last two weeks of his life, when death followed from pneumonia.

J. W. COOPER, of Jones, Oklahoma, after graduation, settled at North Bay, Oneida county, N. Y. Two years later, he removed to Jamestown, Mich. In 1873 he removed to Granville, Mich, where he has continued for thirty-one years. Two years ago, owing to feeble health, he moved to his present home, where he is very much stronger and able to do some practice. At present, he is living on a farm and assisting his son in its management. In 1868, he married Miss L. E. Whitehead, of Rochester, N. Y., who is still living. He has a family of six children. At Granville, where he remained the longest time, he was president of the village for many years, and occupied other responsible positions. His health was good until the last two years when, from an attack of influenza, he suffered from general exhaustion and weakness, which caused him to seek a warmer climate, and a long rest on the farm.

T. D. CROTHERS, of Hartford, Conn., located after graduation in 1865, at West Galway, N. Y. In 1870 he removed to Albany and became an assistant to the Chair of the Practice of Medicine and Lecturer on Hygiene. In 1875 was appointed assistant physician to the New York State Inebriate Asylum at Binghamton, N. Y. In 1878, he was made superintendent of the Walnut Lodge Hospital, Hartford, Conn., which position he holds at the present time. In 1876, he was appointed editor of the *Journal of Inebriety*, and still retains this position. In 1888 and 1889, gave a short course of lectures on inebriety for the students of

the University of Vermont at Burlington, and repeated this before the Albany Medical College the next year. In 1901, he was made professor of diseases of the brain and nervous system at the New York School of Clinical Medicine. Dr. Crothers is the author of several books, the principal of which are "Diseases of Inebriety," "Morphinism and its Treatment," "Drug Habits and Their Treatment." Dr. Crothers married in 1875, Mrs. Risedore, and has no children. He is a 32d degree Mason, a Member of the Congregational church, and is in active practice at the head of a large private hospital. Dr. Crothers was president of the Alumni Association of the Albany Medical College in 1901.

CORNELIUS J. DUMOND died at his home in New York City, January 21, 1905, aged 68. He was a successful physician and seems to have passed a very quiet life, little known outside of the circle in which he lived.

ROBERT M. FULLER, of New York City, after graduation began to practice in Albany, and the next year moved to New York City. While a student he became interested in photo-microscopy and pursued many original studies, inventing new appliances, and was really a pioneer in this field. His work began at the Ira Harris Hospital, Albany, N. Y., and was continued in the New York University, where for many years he served as a lecturer on skin diseases. His photographic work on crystals of arsenious acid and other minerals, was the first done in this field, and gave him a national reputation. In 1878, he invented a new system for preparing drugs in the form of tablet triturates to secure accuracy of measurement. This invention has been adopted by all the leading pharmacists of to-day and his original work has been recognized by appointment as a delegate to aid in revising the United States Pharmacopoeia. Besides these original studies, the doctor has occupied many responsible situations, as lecturer, chief of staff in several dispensaries in New York and as a member of numerous societies. He is a prominent Mason, and unmarried. He is still actively engaged in microscopic and photographic work, and is considered an eminent investigator in this department.

D. FLOWER, of Monticello, Wis., after graduation went to Berlin and Heidelberg, Germany, where he continued his studies. Coming back he taught physics and languages for several years, then entered upon the practice of medicine at Monticello, where he is at present. Later he married Miss Katie Roser, from which union there are five children. He has been health officer, insurance examiner, and held other important local offices. He is the oldest and most influential physician in his community and is a successful, prosperous man.

D. B. HOWARD returned to Warrensburg, N. Y., after graduation and studied with his father, who was a physician. He remained here until his death, in 1903. Dr. Howard was a quiet, conscientious man, who attended to business carefully, was a reliable physician, had a large practice, acquired much property, was a member of various societies, and very highly respected.

A. C. GOFF located in Syracuse, N. Y., and appears to have been very successful as a practitioner, but died of consumption in 1887.

OREL McFADDEN, of Massena, N. Y., was born in Clinton county, N. Y., and was a teacher in early life, marrying a Miss A. Dominy, in 1862. While studying medicine he became a nurse in a government hospital at Fort Schuyler, N. Y. He attended a course of lectures at Burlington, Vt., then came to Albany, where he graduated in 1865. He began practice in Charlotte, Vt., then moved to Winooski, the same state, then in 1869 removed to Massena, N. Y., where he is at present. He is now the oldest physician in that section of the country and has a large and lucrative practice. In 1890, after an attack of pleurisy, there were indications of tuberculosis, which passed away after a residence of six months in the Adirondack regions. He is a member of the Congregational church and a prominent Mason. He has two sons and one daughter.

LEWIS W. PENDLETON. Took his first course of lectures at Bowdoin College, in 1863, his second course at the Albany Medical College in 1864, graduating in 1865. He began practice in Belfast, Me. On October 9th, 1867, he was married. During the fifteen years of his practice in Belfast he won hosts of friends and was one of the most influential and successful physicians of the lower Penobscot. Late in 1879 he removed to Portland, Me. Was appointed attending physician to the Maine General Hospital and transferred to the surgical staff in 1882. He was very popular as a speaker and made addresses at many large medical meetings. He contributed largely to medical literature. In 1886 he developed locomotor ataxia, and in 1895 gave up his practice, removing to Palm Beach, Fla. He died at Palm Beach suddenly, January 13, 1898.

J. A. PHILLIPS, of Morristown, N. Y., located at Brier Hill, N. Y., in 1866. In 1872, he moved to Morristown, his present residence. In 1869, he married Miss N. C. Cummings, of Trenton Falls, N. Y. Three children were born of this marriage, all of whom are grown and are in business. The doctor is a member of the New York State Medical Society, the St. Lawrence County Medical Society, and was United States Pension Examiner for four years; has been health officer and examiner for many life insurance companies, is a member of the Episcopal church, and is a 32d degree Mason. He attended the Alumni meeting at Albany in 1890, on the 50th anniversary of his birth.

GEORGE ROWE was borne at Schoharie, N. Y. After working on the farm and clerking in a store he began the study of medicine. After graduation he located at Bramans Corners, N. Y., and became a very successful practitioner until 1883, when he removed to Gloversville, N. Y., and went into the drug business, continuing an office practice. In 1868 he married Miss R. E. Steward, who is still living. He has no children. He has been coroner of Schenectady, N. Y., and a member of that county society. He is a prominent Free Mason and has acquired large property. He is still practicing medicine, but his drug business occupies most of his time.

W. H. ROBB, of Amsterdam, N. Y., began practice after graduation

with his old preceptor, Dr. Snell. He married in 1880. He has three children, all living. After a very successful practice the doctor died, January 12, 1898, of pneumonia. He was a member of the New York State Society and the various county and city societies of his neighborhood, being president of several of them at different times. Besides the practice of medicine, he was a very energetic surgeon. He held numerous minor offices and was influential in founding a library. His friends, as a memorial, contributed a large sum of money to perpetuate his work. Dr. Robb contributed several very practical papers to medical literature and was at his death a leading consulting physician in the community. He was a member of the Presbyterian church and was regarded as an eminent, reliable citizen.

CONANT SAWYER, after graduation commenced practice at Au Sable Forks, Essex county, N. Y., and remained here for twenty-two years. In 1888, he accepted an appointment as prison physician at Auburn, N. Y., and continued here until his death from pneumonia, in 1898. Dr. Sawyer was twice married and had eight children by his first wife and three by his last, one of whom is a physician in practice in Auburn. Dr. Sawyer was a very successful physician and later in life became interested in politics and had a large personal following. He was a general practitioner and a man of good judgment and warm sympathy with the poor and afflicted everywhere.

HENRY C. VAN ZANDT. Began his professional career in Long Island. Later he returned to Schenectady, his home, where he established a substantial practice. He was also identified with the drug business. Was a member of the staff at Ellis Hospital, a member of the Holland Society, Schenectady County Medical Society, and the New York State Medical Association. He died February, 1900.

EDWARD J. WOOD, of Stillwater, N. Y., after graduation went to work with his father in the coal and lumber business. Soon after the death of his father he decided to continue the work and give up the practice of medicine. He has remained in this work, to which he has added farming, up to the present time. In 1867 he married Miss L. Cornwell, of Canaan, Conn. The doctor has taken a prominent position and been president of the village and an active member of the board of education, is a Baptist and a Mason, and retains his interest in medical matters, frequently coming to the alumni meetings. He has been successful financially and represents the best class of prosperous citizens who strive continually to make the world better.

GEORGE J. WHITAKER, located in the town of New Haven, N. Y., in January, 1866. The next year in 1867 he married Miss Ella N. Barker. One child by this marriage died at seven years and later his wife died. He remained in this place fifteen years acquiring a very large practice and accumulated some property. In 1880 he removed to Rodman, N. Y. and remained four years. He then returned to Fulton, N. Y., his native place, where he has continued in practice up to the present time. In 1884, he married Miss L. A. Dear and has three children by this marriage, two of whom are still living. The doctor is a member of the Oswego and Jefferson County Medical Societies,

also the Central New York Medical Society. He has attained local prominence as a conservative, careful physician and one very highly respected in his neighborhood.

Respectfully submitted,

THOMAS D. CROTHERS, *Historian*.

HISTORY OF THE CLASS OF 1875.

FRANKLIN P. BEARD. Soon after graduating located at Summit, N. Y., staying there until 1886, when he removed to Cobleskill, N. Y., where he is now living, doing principally office consultation work. Is in good health, married and has five children.

JOHN N. BRADLEY. Is in active practice at Berne, N. Y., is married and has six children.

WARREN M. BRAND. Dead. No other record.

HERMON CHASE. Is in practice at Palmyra, N. Y.

BERTHOLD M. J. CONLIN. Is a very prominent physician at Owatonna, Minn., and is doing a good business.

GEORGE F. COX. Began practice at Stillwater, N. Y., but died on September 21st, 1876 of typhoid fever.

JAMES O. DAVIS. After graduating was the proverbial rolling stone, gathering no moss, until 1883, when I located at Howells, N. Y. My practice has been that of the average country practitioner. Have been health officer of the town, district physician, and now hold appointments as medical examiner for the principal life insurance companies.

JOHN D. DAY. Is in active practice at Carbondale, Pa., where he has been for the last twenty years. No previous record for the first few years of his practice. Has been very successful and in excellent health.

GEORGE E. ELMENDORF. Took up the life of a country practitioner and located at Coeymans Hollow, N. Y., where he died June 16th, 1894, aged forty-three.

BENJAMIN F. EVANS. Is living in Clarks Green, Pa., a small town just out of Scranton. Served for a number of years as attending physician at Hillside Home, the institution that Scranton maintains for its poor.

LEWIS FERNALLD. Is in practice at Maynard, Minn.

ROBERT FULLER. Died at Schenectady, N. Y., May 9th, 1894.

FRANCIS E. HALE. Located for practice at Providence, R. I., where he died May 21st, 1900.

WILLIAM ASBURY HALL. In directory at Minneapolis, Minn. Did not respond to request for information.

WILLIAM N. HAYS. After practicing a few months in West Stockbridge, Mass., and Newark, N. J., opened his office November 27th, 1876 in West Albany, N. Y., continuing in practice there until the

time of his last illness. He was a member of the Medical Society of the county of Albany, and prominent in church work. Was married. Died July 29th, 1885 at the Hudson River State Hospital, Poughkeepsie, N. Y., from the exhaustion of acute mania after a sickness of only nine days, induced by overwork.

HENRY P. HOLMES. Is in practice in Troy, N. Y., where he has spent most of his life. Is enjoying good health and prosperous.

JOHN W. HOUSER. Upon graduating opened an office in Taylor, Pa., and has remained there ever since. Has been health officer a number of years and served ten years on the Board of School Directors. In the spring of 1902 was called by the Bureau of Health, Scranton, to take charge of the smallpox epidemic. After a fight lasting twenty months had the pleasure of reporting the city free from the disease, and a lower per capita death rate than any other city in the country. Was then engaged as an expert in the differential diagnosis of the eruptive diseases, a position which he still holds. Is a member of the surgical staff of the West Side Hospital, Scranton. Is still in excellent health and doing a very large practice.

JAMES B. KERSHAW. Dead. No other record.

JOSEPH MCC. LANSING. No record.

DAVID S. NEER. In directory at Beaucoup, Ill. Did not respond to request for information.

NATHANIEL E. PAINE. After graduating went abroad and studied until 1877, spending most of the time in Vienna. Upon his return began work as assistant physician at the Middletown State Homeopathic Hospital, and remained there until October 1880. After resigning from Middletown traveled in this country and Europe until appointed superintendent of the Westborough Insane Hospital (Massachusetts), April, 1885. The hospital was then just being built. He remained in charge until February, 1892, after having had 2,000 patients under his care. Immediately after leaving Westborough purchased property at West Newton, Mass. and opened a sanatorium for nervous diseases which he still conducts. For sixteen years has been professor of mental diseases in the Boston University School of Medicine and has been active in medical society work, etc. Is married, has three children and is prosperous.

WILLIAM F. PATERSON. In directory at Chapel Hill, N. J. No response to request for information.

HENRY C. PECK. Is in active practice at Fort Dickinson, N. Y., where he has met with a good measure of success. Has served one term as coroner of Broome County.

T. KIRKLAND PERRY. Began practice in Albany, N. Y., immediately after graduating, and has remained here ever since in active practice in general medicine. Has been married twice. Was appointed on medical staff of Albany Hospital dispensary in 1876 and served until 1886, resigning. Was appointed on medical staff of St. Peter's hospital in 1885 and is still a member. Was lecturer on experimental physiology during the spring course of lectures in Albany Medical College, '77, '78 and '79. Is a member of the medical society of the County of

Albany, Medical Society of the State of New York, and of all the Masonic bodies.

MILFORD L. PINE. After graduating located at Fabius, N. Y., residing there until 1895, when he left for Florida, where it is supposed he died shortly after his arrival.

WILLIAM L. PURPLE. Practiced all of his life at Albany, N. Y., where he was very successful. Died May 25, 1904.

ELBERT T. RULISON. After graduating located at Bath-on-Hudson, N. Y., remaining there four years and then going to Amsterdam, N. Y. After practicing there 16 years he removed to Buffalo, N. Y. Here he stayed three years and located at Schenectady, N. Y., his present residence, where he is conducting a very successful business. Makes gastric diseases a specialty. He is married and has three children.

JULIUS R. SCHMIDT. Died in 1877. No other record.

CLARKSON C. SCHUYLER. Soon after graduating was appointed assistant surgeon to the Troy Hospital, serving until 1881. In November, 1882 was appointed attending surgeon at the same hospital, and served in that capacity for ten years when he resigned to devote his entire time to the specialty of diseases of the nose and throat: this after spending a winter at the London Throat Hospital as clinical assistant. In 1892 gave up active practice and located at Plattsburgh, N. Y., doing principally consultation work. Was appointed by Governor Flower a member of the New York State Forest Commission. Was also appointed by Governor Black as Commissioner to the Paris Exposition. During the Spanish War was tendered the position of surgeon on the medical staff at Montauk Point but declined. Is married, but has no family.

SETH G. SHANKS. After graduating located in Albany, N. Y., where he is still doing active work in general medicine. Is married and has one daughter.

ARTHUR V. H. SMYTH. Is in active practice in Amsterdam, where he has been successful.

PETER SNYDER. Located at Rensselaerville, N. Y., where he died during the year 1898.

WILLIAM STEVENS. Is in practice in New York city.

JOHN W. STERRIKER. In directory at Roseboom, N. Y. No response to request for information.

DANIEL P. VAN COURT. In directory at Mohawk, N. Y. No response to request for information.

WILLIAM H. VAN DERZEE. Died in Albany, N. Y., August 29th, 1883, of peritonitis.

GEORGE N. VIAL. Is in practice at East Dorset, Vt.

GEORGE W. WENTWORTH. Dead. No other record.

EBEN A. WOOD. Is in practice at Syracuse, N. Y.

Respectfully submitted,

ELBERT T. RULISON. *Historian.*

HISTORY OF THE CLASS OF 1885.

The class of 1885 was graduated with 33 members. I have tried to get a response from each living member. Circulars, letters and postals were sent out to the members and 24 responded, 3 have died, 1 is missing and 5 failed to answer. Of the latter two are known to be living at the addresses given, so all but three members of the class have been heard from.

As far as the letters give information, 26 have married and have 32 children, 1 remains single and 6 have not indicated their state of bliss. The letters received follow arranged as short biographies.

ISAAC N. ALBRIGHT., 571 Madison Street, Chicago, Ill. I crave pardon for long delay in answering your esteemed favor of March first, and deny any inference that the delay has been due to either indifference, or a terrible rush of business so commonly the condition with many medical men. I expect the truth simply is a case of negligence and plain disregard of social and fraternal obligation, for which I hope forgiveness. I regret my inability to be with you at time of reunion. Will you honor me with most kind remembrances to the members of our class. Perhaps no one will be so disappointed as myself for my inability to be with you. You ask for information regarding events in my life since 1885. Well I have been busy in the practice most of the time mentioned. At times I have chased various illusions of a speculative nature and usually to my sorrow, and the advantage of other parties. Some time I have spent in quest of an Utopia, in which to make a final settlement, and have finally decided upon an ideal place called "Baraboo," in which, if I can ever locate, I expect to be happy ever after. You will find a description of "Baraboo" in a magazine called "To-Morrow" of which I send you a copy under separate cover. Pending my residence in Baraboo, you will continue to find me at above address in Chicago. Let me hear from you. Best wishes to all.

ERNEST L. ANGUS. Reported as having died in Colorado Springs, April 19, 1892. Request for information from the Department of Health of that place has brought no reply.

SAMUEL E. ARMSTRONG, Rutherford, New Jersey. As to my post-graduate history, it is really very uninteresting to me and it seems to me that it must be more so to others. I located in Passaic, N. J., soon after graduation and "held on" there about three years, when, by the advice of a stranger, I "pulled up stakes" and came to Rutherford, where I have been fairly busy ever since. I am a member of pretty nearly every organization in town, and even the borough government, having been elected a councilman on the democratic ticket, the only democrat to have been so elected, within the past ten or fifteen years. So you see I am in politics; that is, I permitted the people to elect me to the office because there is so much less in politics than in medicine; by contrast this makes the practice of medicine much more cheerful and I like it.

If the boys wish to know anything about the size of our family,

tell them we have ten and that there is a certain party living in Washington, D. C., who is a great admirer of ours and advises all of his numerous friends to follow in our footsteps. I trust that you are "on."

Of course I am a member of the regulation medical societies and "do my turn" now and then. I am not aware that any one has ever died from over-interest, or been shocked to death by my blunders. I hope to issue my next edition at the meeting of the State Society in June, when I shall hand in my report on Mosquitoes—of which we have a few in Jersey—and Malaria—of which we have some in the same State.

EDWARD F. BROWN. No directory gives his name or address and I have been unable to locate him.

TERRENCE L. CARROLL, 297 Lark Street, Albany, N. Y. Has led the life of a family physician, without specialties. Was resident physician at Albany Alms House and then Surgeon of U. S. Revenue Steamer *Bear*, making the cruise from New York to Point Barrow, Alaska, via Cape Horn and repeating the Arctic course, the following year. Was physician to the Albany County Penitentiary for nine years from which place politics dislodged me, which was quite a shock, as I thought I had a life sentence and hoped escape was impossible. But nothing seems impossible to those ———— Republicans. Am now an attending physician to St. Peter's Hospital and also the South End Dispensary. Am a poor lonely bachelor.

ANDREW C. CROUNSE, Melrose, N. Y. I came to Melrose, Rensselaer County, N. Y., in the month of April, 1885, to practice and have lived in this town twenty years this April. I married in October, 1888, and rented a house for three years, after which I purchased a building lot and erected a house, barn and other buildings, all of which are free from debt. I am a member of the Medical Society of Rensselaer County, the Medical Society of Troy and Vicinity, and the New York State Medical Association. I am also medical examiner for several life insurance companies.

SYLVANUS C. CURRAN, 226 Warren Street, Hudson, N. Y. Has not responded to circular. Have occasionally met him in Albany. For a time he lived in East Greenbush. He looks happy and prosperous.

IRVING S. EDSALL, Middleville, Herkimer County, N. Y. If I should try and write a history of myself since the 4th day of March, 1885, when we were handed our rolls of parchment tied with blue ribbon—the day when the Class of 1885 started on its road to success and fame and incidentally to cure the ills of suffering humanity—my history during the past twenty years, if written in full, would doubtless be the same as the rest of our celebrated class. I will simply say that soon after graduation I settled here and the same fall I was married to Miss Ella Sikes of Prattsville, N. Y. We have one son, William, aged fourteen years. I have been fairly successful in my work, and while not rich am making enough to keep the wolf from the door and have some of the comforts of life. I have been president of the Herkimer County Medical Society; president of the Village of Middle-

ville, and am president of the Board of Education at present; and for the past six years I have been on the staff of the Faxton Hospital at Utica. I have a very good office practice and ride a good deal. I am in good health and try to enjoy life as I go along. I hope to meet the "boys of 1885" and talk over the past. I am looking forward with no small degree of pleasure to the second of May when I wish I might see all of the Class. It would seem as if the twenty years were nothing. With best wishes for a full class reunion.

WILLIAM CADY FAWDREY, Lorraine, Jefferson County, N. Y. I think if the members give a history of their lives it will be very interesting. Be that as it may, I landed in Barnes' Corners, Lewis County, N. Y. on May 10th, 1885, and was there for four years. I removed to Lorraine, Jefferson County, and have practiced here ever since. Have done a great deal of hard work and succeeded so far in keeping out of the poor house.

CHARLES C. FLINT, Lenox, Mass. No reply received from him.

CHARLES W. GEEL, Berlin, Rensselaer County, N. Y. After graduation I came to Berlin, N. Y. where I commenced the practice of medicine. I have remained here ever since and continue in the same work. I have met with very good success, have a good practice and have every reason to be happy and contended.

DAVID GILLILAND, Catskill, N. Y. Dr. David Gilliland has not replied to circular or notices sent him, but from reliable sources the following information has been obtained: He has resided at Catskill, N. Y. since graduation, but some years ago met with an accident which has left him hopelessly crippled. He is married and has a son and a daughter who are both married and live in New York city. He has been a resident of the Masonic Home and expects to return there in a short time.

ROBERT G. GOUDIE, Pawling Avenue, Troy, N. Y. Has not replied to circular. Has resided in Troy, Watervliet and Lansingburgh since graduation.

ALFRED N. GRIFFIN, Central Bridge, N. Y. Since leaving college I have had a good country practice. Am married and have two children.

JOSIAH HASBROUCK, Jr., Port Ewan, N. Y. After graduation I spent some months in practice with my father at Port Ewan, N. Y., then took a post-graduate New York city course of six months. Settled at Summerville, N. J.; stayed during the summer months with no prospects of business in view; went back to New York city and took charge of a physician's business who went to Europe. After his return I wanted to stay in New York, but the death of Edward McKenzie at Port Ewan seemed a good opening for me and I went into partnership with my father in 1886. This lasted until his death in 1889; I have since that time been going it alone. Was married in 1893 and have two children, a boy and girl. Have been a member of the Rondout Canoe Club, its Commodore in 1889; director of the National Bank of Rondout; president of the Ulster County Medical Society; member of the New York State Medical Association; supervisor of Esopus, sheriff of Ulster County from January 1, 1900 to January 1, 1904; elected in 1900 by the largest majority ever given one seeking office. Have

always been interested in real estate; now own and operate the ferry running from Rondout to Sleightburgh. In the summer of 1903 I went to Europe and spent three months in travelling about with my brother who was ill. I am still in the harness with the same old fire in me of twenty years ago. I look forward with the keenest interest for the class history of our boys.

ALEXANDER L. JOHNSON, 16 East Fulton Street, Gloversville, N. Y. After graduation at the A. M. C., I went to New York and took a three months course in Chambers Street Emergency Hospital, then went to Rochester, N. Y., and started in with great confidence; but after a year of patience and very little practice, I thought a smaller place would bring better results. So I moved to Lima, N. Y., where I remained for five months, but could not see any possibilities there for me, so packed my belongings and came to Gloversville, N. Y., May 1st, 1887, where I have since lived and enjoyed good health and a fair practice. Was married in June, 1889, but have no family. Have held the office of county physician, city physician and health officer. I am examiner for ten old line life insurance companies, a member of the Fulton County Medical Society.

CHARLES R. KNAPP, Forest City, Penn. Has not replied to circular.

ELMER E. LARKIN, Plattsburgh, N. Y. I have just received your letter as I have been in Florida all winter and only got home last Friday. As to a history of my life for the class would say that it has been without any particular incident that is of interest to any one. I was born on the 23rd of April, 1864 and educated at the Troy Conference Academy and the State Normal School at Potsdam, N. Y. Since my graduation I have been in practice in Albany and Plattsburgh. I married in 1897 and have one son aged four years. I am doing the work of an ordinary country physician and expect to continue in such practice as long as I live.

ALBERT MARSH, 10 Blackwood Street, Back Bay, Boston, Mass. My life since graduation has been rather uneventful. After a year spent at the New York Polyclinic I returned to Albany where I practiced till 1891, during part of which time I was assistant to the Chair of Obstetrics at the Albany Medical College and the balance of the time instructor in the same branch. In 1891, I removed to Boston, Mass., where I have since resided, treating diseases of the throat and lungs only. In 1898 I married Miss Fannie A. Wellock of Boston, and in 1901 took down my sign and retired from active practice.

JAMES P. MARSH, 1828 Fifth Avenue, Troy, N. Y. I have been in the continuous practice of my profession since graduation. I am located at Troy, N. Y. and have succeeded in making an average living and that is about all. I have not accomplished anything out of the ordinary and do not expect to. I am married and have one child. Dr. Marsh is an attending surgeon to the Samaritan Hospital.

RALPH A. McDUGALL, Duanesburgh, N. Y. After graduating on March 4th, 1885, I was appointed an interne to St. Peter's Hospital, where I remained about seven months, and then came to Duanesburgh where I have practiced ever since. In 1887 I was married, had

one son born in 1889 and another in 1892, since which time there seems to have been a cessation of the baby business in my own household, probably thinking it would be more profitable to let some one else raise the babies. I have been Health Officer of the town for about fifteen years, also examiner for four life insurance companies, which with a large country practice and a farm of 250 acres, keeps me busy most of the time. Yet, with all these cares on my mind I have always time to think of the happy hours we spent as a class at our Alma Mater. The twenty years have passed very rapidly and during this time I have met but three or four of the class, but on May 2nd, I will be with you and hope to see every one.

MARTIN MCHARG, 806 Madison Avenue, Albany, N. Y. Soon after graduation I became associated in practice with Dr. Willis G. Davis of Dunnsville, N. Y., I remained there one year, but not liking the country as a field for work I decided to locate in Albany. I first located at 197 Lancaster Street, where I stayed about six months, and not being over-run with patients I became restless and began looking around, and found what I thought, and which afterwards proved to be, a good opening in the West End. I located on upper Madison Avenue and have remained there for the past seventeen years. I have been doing general practice and I think I can truthfully say that I have been quite successful in my work. I have been one of the dispensary physicians at the Albany Hospital for the past six years; am attending physician at St. Vincent's Orphan Asylum and am medical examiner for several insurance companies. In 1889 I married Miss Minetta Crounse of Altamont, N. Y. We have one son.

EDWARD A. MILLER, Meredith, N. Y. Did not reply to circular.

ADELBERT E. MOODY, Dickinson Centre, N. Y. I spent the first year after graduation in a drug store at home in Saranac Lake and did some outside practice. I located at Moors, Clinton County, in March, 1886, practiced there about eight years; moved to Isle LaMotte, Vt. I had a fine practice there but had to leave on account of rheumatism. Have been here seven years. I am well and happy and have a good practice. "Something doing" all the time. I was married in October 1886 to Miss Jessie M. Churchill of Moors, N. Y. We have two sons, Ralph Churchill, aged 11, and Richard V., aged two and a half years.

DOUGLAS C. MORIARTA, Saratoga Springs, N. Y. Immediately after graduation I took care of Dr. Bigelow's practice during his absence of several months. About June, 1895, I located in Saratoga Springs, N. Y., for the practice of my profession, where I still reside. Took up immediately the work of assisting surgeon at St. Christina's Hospital for Children, and now for many years have been chief surgeon there. Served as town physician for a number of years, and as coroner from '87 to '90. Have been a member of the staff of the Saratoga Hospital since it was established in 1895 and have been its senior surgeon since 1898. Have dabbled a little in politics and have been Republican Health Officer in a Democratic Board for about twelve years. Served as president of a commission which recently installed in Saratoga a sewage disposal plant costing a quarter of a million dollars. Am a

member of the Saratoga and Glens Falls Medical Societies, the County and State Medical Associations, as well as of the A. M. A. and the Boston Society of Civil Engineers. Am also a member of the Saratoga and Glens Falls clubs, the Royal Arcanum and Past Exalted Ruler of the Saratoga Lodge of Elks—and have a little money left.

HERMANN F. PALMER. Reported as having died at Stuyvesant Falls, March 3, 1886.

SILAS H. PARKS, Reading, Mass. I practiced at my home in Great Barrington, Mass., till February, 1890, when I removed to Reading, Mass., where I have since been engaged in a general practice with fair success. I am married, have three children and own a comfortable home.

E. HUDSON RIDER, 230 Clinton Avenue, Albany, N. Y. After graduation, commenced practicing at Petersburg, N. Y., where he remained one year—from there he settled at Eagle Bridge, N. Y. and was engaged in active practice until 1895, when he located at Albany. In 1902 he visited Europe, taking a post-graduate course at Berlin, Germany, then returned to Albany resuming his profession.

THOMAS P. SCULLY, Rome, N. Y. The history of my life since graduation can be told in a few words. I began practice shortly after graduating, in Cohoes, N. Y. September of the same year I was appointed Health Officer and City Physician of Cohoes and remained in office for three years. In 1890, I moved to Rome, N. Y., where I have remained practically ever since. I was married April 30th, 1895, to Miss Lizzie G. Ness of Learsmont, Waldo County, Maine, the daughter of Dr. Charles H. Ness, a retired physician of that place. Four children have been born to us, two boys and two girls, three of whom are living, Ruby Ness Scully, aged 9, Emerald Agassiz, aged 6, and Jasper Peabody, aged 4. We are all healthy and enjoy life every minute. I have traveled considerably during vacations, over different parts of this country, and in 1901 with my family went to Europe, landing at Queenstown, visited the famous places in Ireland, taking in the hospitals, particularly the famous Rotunda Maternity Hospital at Dublin; thence to Liverpool, to Manchester, to Birmingham, to London, England, thence to Paris, France, to Switzerland, Germany, and Brussels, returning to Liverpool and sailing to New York. I did considerable sight seeing in all the places visited, but devoted most of my time to the hospitals and attending clinics, making a special study of surgery and gynecology. Having a preference for surgical work I have given more thought along that line in practice. Have been surgeon on the staff of the Rome, N. Y., Hospital for several years.

GEORGE M. STILLMAN, Argyle, N. Y. Is it possible that twenty years have passed since we were trembling before the curators? During that time my life has been very uneventful. After graduation I began to show the sick what I had learned in old Albany, in Sand Lake, N. Y., but moved from there in the fall of 1885 to Petersburg, N. Y., where I had a good business. During the spring of 1892, I came to Argyle, Washington County, and have resided here ever since. My practice and friends have been steadily increasing ever since and have

no fault to find with the world. In 1889 was elected to the presidency of the Washington County Medical Society. During 1887, I married Miss Artie L. Babcock of Berlin, N. Y. and have two sons, 16 and 8 years of age. My oldest son will graduate from the High School in June.

FRED J. TOMPKINS, Lansingburg, N. Y. Died August 12, 1901.

JOHN H. VAN RENSSELAER, 602 South Salina Street, Syracuse, N. Y. After graduation I served a term in the Albany Hospital, and then began practice in Oneonta, Otsego county, remaining there ten years; served as coroner for the county for six years; in 1897 I removed to Syracuse, where I am now engaged in active practice, and doing a good business.

HOWARD J. WOOD, 413 Fifty-fifth Street, Brooklyn, N. Y. My first three years were spent in practice in Troy, most of the time being devoted to dispensary work. In 1889 I migrated to Brooklyn, where I have been hard at work ever since. My health continued poor until 1892, when I married; since that happy event the march to success has been uninterrupted. Finding myself one of the pioneers of this section, with no resident specialists, I was called upon to make myself useful in intubation and in fact the general practice of medicine and surgery. Quoting our dear Dr. Vander Veer, "I want to say to you that the *results* have been *very satisfactory, indeed.*"

T. L. CARROLL,
Historian of the Class of 1885.

HISTORY OF THE CLASS OF 1895.

JOHN M. ALLEN. Is in active practice at Despatch, N. Y., where he first located.

EDWIN VAN GAASBECK BALDWIN. Supposed to be located at Castleton, Vt. No reply received from him.

WM. SAMUEL BRISTOL. Took up the practice of medicine in the fall of 1895, on South Ferry street, Albany. Has been successful. Is engaged in general practice. Was district physician in 1898-99, and is examiner for several insurance and fraternal societies. Is a member of the Albany County Medical Society. Was married in 1899 to Miss Cora B. Wooley, of Albany.

ARCHIBALD BUCHANAN, JR., writes: "After graduation, I opened my present office, 128 Third street, Troy, N. Y. Was married in 1896, and have one child. Have been very successful, twice elected coroner of Rensselaer county, member of Rensselaer County Medical Society, Medical Society of Troy and Vicinity. Enjoy good health and have no cause to regret the day I signed my name as a student of A. M. C."

CHARLES SYLVESTER BUTLER. After graduation, returned to his home and assisted his father in practice. In October, located at Nineveh, N. Y. In 1898, took a course at the Polyclinic, returned to Nineveh and was appointed surgeon for the Delaware & Hudson Railroad. In 1899 married Miss Jessie Bushnell and in 1903 located at Harpursville,

N. Y. Has a boy two years old. At present has a lucrative business and enjoys a pleasant home.

THOMAS MICHAEL CLARK. When last heard from was at Springfield, Mass., but whether in active practice is not known.

FREDERICK WM. CORDES. Practiced the first few years at Copake, N. Y. Tiring of country practice, he located, in 1900, at 687 Bushwick avenue, Brooklyn, where he is now doing a satisfactory business. Is a member of the Columbia County and also Brooklyn Medical societies, and is unmarried.

FRANCIS JOSEPH CRUMMEY. Resides in Albany, N. Y. Is not engaged in active practice.

ALFRED DESROCHES writes: "After graduating I passed the necessary examination to practice in Massachusetts, and located at Adams. From the first hour found employment and am here still doing a general practice. I consider that I have succeeded remarkably well in every way. I have been president of two societies, medical examiner for several insurance companies and now am serving a second term as a member of the board of health."

DANIEL DAMIAN DONOVAN. Died at Troy, N. Y., October 27, 1899, aged 23 years.

CHARLES GARTNER in his reply says: "My career has been nothing wonderful during the past 10 years. Located at Brooklyn, N. Y., immediately after graduation, present address 774 Bushwick avenue. Have made a good living, am married and settled down to the usual routine of a city practitioner's life."

ARCHIBALD GILBERT writes: "Went to Germany for several months after graduating, studying surgery and pathology. In 1896 located at Amsterdam, N. Y., where I am still in practice. Am a member of the staff of the Amsterdam City Hospital and St. Mary's Hospital; am surgeon for a number of railroads, member of Amsterdam City Medical Society and the Montgomery County Medical Society. Am not married."

HARRY DUBOIS GOETCHIUS reports that he made first appointment at the Society of the Lying-In Hospital, New York city, serving in 1895 as interne and resident physician. Was appointed medical school inspector in health department in 1896 and is still in that department, at present in division of bacteriology. Was appointed visiting obstetrician to the North Eastern Hospital in 1897, serving several years. Appointed attending laryngologist to Health Department Clinic for Treatment of Communicable Pulmonary Diseases. Is a member of the New York County and City Medical societies, also Society of Medical Jurisprudence. Was married in 1895.

SHERWOOD ACKLER HAGGERTY writes that he located at Richfield, N. Y., where he is still doing a general and surgical practice. "Am doing as well as one can wish, with a country practice. Have been several years a member of the health board and examiner for the leading life insurance companies. Have good health and am married."

WM. DORR HARDY. Last known of him he was located at Union, N. Y. Received no reply from him.

FRANK HAZELETT HURST. His whereabouts are at present unknown. After a few months study in Germany, he located at Albany, but soon went to Oneonta, where for a number of years he is reported to have done a fine business.

FRANK GALE HYDE. Died in California three years ago. Up to the time of his death he gave his attention to the specialties of eye and ear practice.

ARTHUR MANY JOHNSON. Reports that he served one year as interne at Ellis Hospital at Schenectady, then located at his present address, 389 Main Street, East Rochester, N. Y. Was coroner's physician in 1900. Was married in 1902. Doing a general practice.

THOMAS BASSETT KEYES. Did not reply to inquiry, but he has been located in Chicago since graduation. From all accounts he is doing exceedingly well. His present address is 92 State street.

DURAND REED KINLOCH. Located at Utica, N. Y., soon after graduating, and writes "fortune has favored me in many ways. Am a member of the surgical staff of Faxon Hospital, assistant surgeon for New York Central and Delaware, Lackawanna and Western Railroads, physician for Utica Street Railroad Association. I am enjoying a good practice, am married and have one daughter."

EVERETT STARKE KINLOCH. "Am practicing at 2432 Fifth avenue, Troy, where I first located. Have been successful. Have two more children than when at College."

ADELARD LAURION. Last known to be at New Bedford, Mass. Present whereabouts unknown. Letter returned unclaimed.

LOUIS OSCAR LESIEUR. Was last known to be located at Rumford Falls, Me. Letter not replied to.

PETER J. McGRATH. The last known of him he was located at 100 O'Farrell street, San Francisco, Cal. No reply from him.

E. N. K. MEARS. Located in Albany, where he is doing a general practice.

HOWARD WILLIAM MURPHY. Writes that the story of his life is that he served one year at St. Peter's Hospital, studied several months in New York giving special attention to orthopedic surgery. Located at Amsterdam in 1896 and engaged in general practice. Is a member of the staff of the Amsterdam city hospital, lecturer to the training school for nurses, was city physician for two years. Is a member of the City Medical and Montgomery County Medical societies. Married but has no children.

CHARLES LEONARD MYERS. In September following graduation located at Albany, doing a general practice. Has gone about in the even tenor of his way, and has been fairly successful. Is a member of the Albany County Medical Society. Served four years as district physician and one term as coroner's physician. Is married.

SAMUEL PASHLEY. Writes, "Am still pursuing the hard and difficult duties of a country practitioner, at Hartford, N. Y. Have a good practice. Married Miss Emma Moore of Albany, and have a boy seven years old."

EDWARD FERGUSON PICKFORD. Is located at 1010 East Capitol street,

Washington, D. C., and reports that it has been with him a case of the ordinary practitioner of medicine. A hard pull at first with more and more work as the years pass.

LEE PULTZ. The last known of him he was assistant physician in a sanitarium at Atlantic City. No report.

WALTER K. QUACKENBUSH. Located at Lansingburg first, in 1900 went to Trenton, N. Y., where he remained until ill health compelled him to leave. For a time was at Utica and then located at Albion, N. Y., where he reports that he is at present doing well, living in one of the finest spots in the State. Served as attending surgeon at Leonard Hospital, Lansingburg. Was health officer all the time that he was at Trenton. Is married and have two boys.

WILLIAM MONROE RAPP. Writes, "First located at Alcove; after one and a half years went to Glens Falls, then owing to severe illness of both my wife and myself and other misfortunes overtaking me, decided that the Falls were against me and located at Argyle, N. Y., in 1900. Here I have succeeded. In 1902 opened a drug store, having previously passed the examination for licensed druggist." Is a member of both Warren and Washington County Medical Societies, Glens Falls Medical Society, examiner for leading life insurance companies, physician in charge of the almshouse. Has a boy five years old.

FRED JOHN RESSEGUIE. States that after he graduated he spent one year in the Albany Hospital, then located at his present address, 481 Broadway, Saratoga Springs, N. Y. Is visiting surgeon to the Saratoga Hospital. Last year was president of the Saratoga County Medical Society. Has had a fair share of success and is satisfied. Is not married.

ARTHUR THAYER ROBINSON. Died at Mansfield, Mass., November 3rd, 1900.

FRED SAUERBRIE. Died at Clarksville, N. Y., April 2nd 1905. February 7th, 1905, he wrote as follows: "It is strange how soon we neglect our friends and classmates in the struggle and to! incident to our profession. I am well and doing nicely. Located where I now am in 1895. Married in 1896, no children. Do about \$3,000 a year. Have been coroner's physician."

REED ALONZO SAUTER writes: "After serving eighteen months in the Albany Hospital, located in Schenectady, my native home. Do a general practice, which has been steadily growing. Have my own home. Married Anna Aussiker in 1900, and have one daughter. Am at present county physician, enjoy good health and am quite contented and happy.

DANIEL JOSEPH SHAY. Did not reply to inquiry, is reported to be at 56 Hamilton street, Saratoga, N. Y., and has never engaged in the practice of medicine.

LEONARD G. STANLEY. First located in Jersey City, where he continued with fair success till 1897, when he succeeded the late Dr. C. H. Crawford, of Albany, and has from the foundation of that practice built up a good business. During the summer months is engaged at one of the large hotels, as house physician.

RICHARD L. STODDARD writes: "After graduating took charge for four months of a physician's practice, then remained home with an invalid mother till her death. After that served as interne in the Rochester city hospital. In 1897 opened an office in Rochester—38 Clinton avenue, South. I do my own surgical work and also operate for other physicians. Do what is considered a general practice."

HAROLD BISHOP STOWELL reports: "I began practice with my father until 1898, when I located at Lafargeville. After five years I became tired of country practice and returned to Watertown, N. Y., and have since been associated in practice with my father. Married Miss Amy M. Ford in 1899. Have one daughter 4 years old. We are all enjoying good health and I assure you it will be a great pleasure to read the complete class history of 1895."

CHARLES NICHOLS TANNER. Is reported to be located and practicing at East Aurora, N. Y. Received no reply from him.

CHARLES R. TOWNSEND writes that he is practicing at Centralia, Kansas, and is in fairly good health.

CHARLES HAVERLY TURNER writes that he located at Charlottesville. Two years later went to Ashland, N. Y., remained three years, then located at Meridian, N. Y., where he is doing a general practice. Was married at Charlottesville. Is doing fairly well for a country practice.

RICHARD F. VAN HEUSEN. Resides in Albany, and is not engaged in active practice.

WILLIAM J. WANSBORO. Is located at 113 Lark street, Albany. Is doing a successful general practice. Is also connected with St. Peter's hospital. Is married, and a member of the Albany County Medical Society.

CHARLES EDWARD WEIDMAN writes: "I wish it were possible to get all the boys together again, but that will never happen. Located at Gallupville, N. Y., my native home, I fortunately secured my share of patronage, and so far have retained it. In 1896 married Miss Mainetta C. Barringer; have no children. Was supervisor of my town from 1898 to 1901. Vice-president of Schoharie County Medical Society two years, and the past year the president."

JOHN A. WILDER writes: "I would much like to be present May 2nd, but cannot. Have been working pretty hard since leaving St. Peter's hospital. Am enjoying good health. Have held the following positions: assistant in Neurology, South Side Dispensary, Northwestern University, Chicago, Ill., 1896 to 1897, assistant at Saranac Laboratory, Saranac Lake, N. Y., 1897 to 1899, assistant physician Adirondack Cottage Sanitarium, 1897 to 1899, attending physician, Denver Orphans Home, 1900 and 1901; pathologist to Arapahoe County Hospital, 1900 and 1901. At present I hold the following: professor of Pathology, Denver and Gross College of Medicine; attending physician, Denver City and County Hospital; pathologist to St. Lukes, St. Joseph, the Women's, and the Mercy Hospital, Denver; member of the medical board of Agnes Memorial Sanitorium; member of the following societies: American Climatological Association, National Association for the Study and Prevention of Tuberculosis, Colorado State Medical Society

of the City and County of Denver, Clinical and Pathological Society of Denver, and Denver Academy of Medicine. I send kindest regards to all of my friends of the college and class of 1895."

Respectfully submitted,

CHARLES L. MYERS, *Historian*.

The Nominating Committee, by its secretary, Dr. Sadlier, then made the following report:

For President,

CHARLES B. TEFFT ('64), Utica, N. Y.

For Vice-Presidents,

MARK M. LOWN ('77), Rhinebeck, N. Y.

WILLIAM C. KELLOGG ('84), Syracuse, N. Y.

LEROY BECKER ('92), Cobleskill, N. Y.

ALFRED B. HUESTED ('63), Albany, N. Y.

ZOPHER F. DUNNING ('88), Philmont, N. Y.

For Recording Secretary,

J. MONTGOMERY MOSHER ('89), Albany, N. Y.

For Corresponding Secretary,

ANDREW MACFARLANE ('87), Albany, N. Y.

For Treasurer,

ROBERT BABCOCK ('84), Albany, N. Y.

For Historian,

EUGENE E. HINMAN ('99), Albany, N. Y.

For Members of the Executive Committee (term three years),

CHARLES L. MYERS ('95), Albany, N. Y.

THOMAS WILSON ('74), Hudson, N. Y.

HOWARD E. LOMAX ('92), Albany, N. Y.

ARTHUR J. BEDELL ('01), Albany, N. Y.

On motion of Dr. Tucker, the Secretary was directed to cast one ballot for the names contained in the report. The Secretary then read these names and President Cotter declared the members named in the report the duly elected officers of the Association, for their respective terms.

Dr. Tefft, the President-elect, was called forward by President Cotter, and in a few well-chosen words expressed his thanks to the Association.

The Recording Secretary made the usual announcements of the further program of the day, and no other business appearing, the meeting adjourned.

COMMENCEMENT EXERCISES.

The seventy-fourth commencement exercises of the Albany Medical College were held at Odd Fellows' Hall, on Tuesday Afternoon, May 2, 1905, at three o'clock, in the presence of a large audience. Rev. Dr. A. V. V. Raymond, Chancellor of Union University, presided, and upon the stage were seated the members of the Faculty, officers of the Alumni Association and prominent citizens.

The following was the

ORDER OF EXERCISES.

Overture—"Piff, Paff, Pouf,".....Schwarz

Prayer—REV. WILLIAM PRALL, D. D., PH. D.

Music—SELECTION: "The Isle of Spice,".....Jerome

Essay—CHARLES WILLIAM LOUIS HACKER

Music—SERENADE, "Moonlight,".....Moret

CONFERRING DEGREES

BY ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.
Chancellor of the University.

Music—VALSE, "Love Land,".....Hobymann

Address to the Graduating Class—Hon. JUDSON S. LANDON, LL. D.,
Schenectady, N. Y.

Music—DANCE, "Radium,".....Schwartz

Valedictory—KENNETH DANIEL BLACKFAN

REPORT ON PRIZES AND APPOINTMENTS

JOSEPH D. CRAIG, M. D.

Music—Two STEP, "Southern Melodies,".....*Dubuclet*

The graduating class was as follows:

Kenneth Daniel Blackfan.....	Cambridge, N. Y.
James Marmaduke Boddy, A. M.....	Troy, N. Y.
Homer Andrew Bushnell.....	North Adams, Mass.
George Morris Casey.....	Schuylerville, N. Y.
Archie Bert Chappelle.....	Kingston, N. Y.
Arthur Preston Clark.....	Albany, N. Y.
Kenn Romeo Coffin.....	Cooperstown, N. Y.
Miles Jacob Cornthwaite.....	Troy, N. Y.
John Henry Farnian Coughlin.....	Troy, N. Y.
Walter Allen Cowell, A. B.....	Albany, N. Y.
John Dixon Crane.....	Hawley, Pa.
Orrel Charles Curtis.....	South Egremont, Mass.
Theodore David Dockstader.....	Sharon Center, N. Y.
Patrick John Donahoe.....	Albany, N. Y.
William Mulvihill Dwyer.....	Amsterdam, N. Y.
John Peter Faber.....	Albany, N. Y.
Thomas Joseph Flynn.....	Johnstown, N. Y.
Perlia Elijah Garlock.....	Sprakers, N. Y.
William Joseph Garvey.....	Troy, N. Y.
Charles Erastus Green, M. D.....	Brooklyn, N. Y.
Fred Flanagan Gremore.....	St. Regis Falls, N. Y.
Charles William Louis Hacker.....	Albany, N. Y.
Walter Ennis Hays, A. B.....	Albany, N. Y.
Chester Alan Arthur Hemstreet.....	Waterford, N. Y.
Thurman Alson Hull.....	Williamstown, Mass.
Lemuel Rankins Hurlbut.....	Troy, N. Y.
Frank James Hurley.....	Bennington, Vt.
Matthew Joseph Keough.....	Cohoes, N. Y.
Oscar Franklin Larson.....	Poultney, Vt.
Edward Miltimore.....	Catskill, N. Y.
Francis Joseph Noonan.....	Troy, N. Y.
George Washington Papen, Jr.....	Albany, N. Y.
Herbert Bowen Reece.....	Troy, N. Y.
William Garfield Rommel.....	Troy, N. Y.
Henry Stanton Rowe, Jr., A. B.....	Cohoes, N. Y.
Harry Rulison.....	Albany, N. Y.
Frank George Schaible.....	Albany, N. Y.
John Ralph Schermerhorn.....	Randall, N. Y.
Frederick Foster Schirck.....	Saratoga Springs, N. Y.
Arthur Hamilton Schuyler.....	Fonda, N. Y.
Francis Joseph Scott.....	Cohoes, N. Y.

Benjamin Franklin Seaman.....	Matteawan, N. Y.
Hamilton Munn Southworth.....	Nassau, N. Y.
Charles William Stratton.....	Lee, Mass.
Charles Clark Sweet.....	Petersburg, N. Y.
James Harvey Van Buren.....	Jefferson, N. Y.
Edward Hellis Vines.....	Saratoga Springs, N. Y.
George Walrath	St. Johnsville, N. Y.
Alfred Le Roy Warner.....	Troy, N. Y.
Roscoe Conkling Waterbury.....	Nassau, N. Y.
James Watson White.....	Wappingers Falls, N. Y.
Edwin Barnes Wilson, A. B.....	Hudson, N. Y.

Dr. Craig presented the prizes. He read a report on the Vander Poel prize, endowed by Mrs. Gertrude W. Vander Poel, in memory of her husband, the late S. Oakley Vander Poel, M. D., for many years a professor in the college, stating that the prize, consisting of a clinical microscope and accessories, offered to the senior student passing the best bedside examination in general medicine, has been awarded to Dr. Edwin Barnes Wilson, with honorable mention of Drs. C. W. L. Hacker and Harry Rulison, and that at the competitive examination for house physicians and surgeons at the Albany Hospital the following appointments had been made: Drs. Edwin Barnes Wilson, Thomas J. Flynn, Charles W. L. Hacker, Henry S. Rowe, Arthur H. Schuyler, and John R. Schermerhorn; at St. Peter's Hospital, Drs. Harry Rulison, George M. Casey and Frank J. Hurley; at Raybrook, Drs. P. E. Garlock and Fred F. Gremore; at the Troy Hospital, Drs. John H. F. Coughlin, F. J. Scott and F. J. Noonan; and for the position of pathological house officer at the Albany Hospital, Dr. Truman S. Hull.

The prize offered by Drs. Vander Veer and Macdonald for the best report of the surgical clinics was awarded to Dr. Frank G. Schaible. For the second best report of these clinics, the prize offered by Drs. Hale and Morrow was awarded to Dr. Henry S. Rowe, Jr.

The prize consisting of an ophthalmoscope, offered by Dr. Merrill for the best report of the eye and ear clinics, was awarded to Dr. Herbert B. Reece.

The Townsend Physiological prize endowed by the late Professor Franklin Townsend, Jr., M. D., was awarded to Mr. J. R. Gillett, for passing the best examination in physiology at the end of the first year of study.

Dr. Boyd's prize to the student passing the best final examination in obstetrics was awarded to Dr. Oscar F. Larson.

The prize consisting of a case of surgical instruments, offered to the senior student passing the best final examination, by the late Dr. T. W. Nellis, was awarded to Dr. C. W. L. Hacker, with honorable mention of Drs. Kenneth D. Blackfan and Walter A. Cowell.

The prize offered by Dr. H. R. Powell to the second-year student passing the best final examination, consisting of a general operating case, was awarded to Mr. Theobald F. Doescher, with honorable mention of Mr. LeRoy Dunbar.

A prize consisting of Gross' complete pocket case of instruments, offered by A. B. Husted & Co. to the first-year student passing the best final examination, was awarded to Mr. George S. Silliman, with honorable mention of Mr. D. P. Burch and Mr. E. H. Burnes.

The Daggett prizes, consisting of eighty and forty dollars, respectively, for the best "anatomical specimens," were both awarded to Dr. Thurman A. Hull.

The Daggett prize for the best "deportment irrespective of scholarship," consisting of eighty dollars, was awarded to Dr. Orrel C. Curtis, and the second prize, consisting of forty dollars, was awarded to Dr. Edward H. Vines.

THE ALUMNI DINNER.

The thirty-second annual dinner of the Alumni Association was held at the "Ten Eyck," on Tuesday evening, May 2, 1905, at half past eight o'clock. About one hundred and fifty were present, including members of the Association, the guests, and members of the graduating class.

After the tables had been cleared and cigars passed, the following toasts were responded to, the retiring President, Dr. John H. Cotter, acting as toastmaster:

1. "Union University," Chancellor Andrew V. V. Raymond.
2. "The President-Elect," Dr. Charles B. Tefft.
3. "The Clergy," Rev. Father Livingston, Poughkeepsie.
4. "The Faculty," Dr. Samuel B. Ward.
5. "The State Department of Education," Mr. Howard J. Rogers.
6. "Law," Joseph A. Lawson, Esq.
7. "The Class of 1905," Dr. Thomas J. Flynn.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, APRIL, 1905.

Deaths.

	1901	1902	1903	1904	1905
Consumption	21	18	21	16	14
Typhoid fever.....	2	1	2	4	0
Measles	2	0	0	0	5
Scarlet fever.....	1	0	4	1	0
Whooping-cough	0	1	0	0	1
Diphtheria and croup.....	5	0	2	2	2
Grippe	5	0	2	2	1
Pneumonia	12	8	12	20	13
Broncho-pneumonia	2	4	3	3	7
Bright's disease.....	11	17	16	15	17
Apoplexy	14	6	16	13	8
Cancer	5	10	4	12	13
Accidents and violence.....	8	9	13	8	4
One year and under.....	17	14	12	14	23
Seventy years and over.....	21	26	32	37	37
Total deaths.....	156	136	169	183	158
Death rate.....	18.96	16.53	20.55	22.25	17.30
Death rate less non-residents	16.31	13.79	17.19	18.83	.....

Deaths in Institutions.

	1902		1903		1904		1905	
	Resident.	Non-resident.	Resident.	Non-resident.	Resident.	Non-resident.	Resident.	Non-resident.
Albany Hospital.....	7	9	9	9	8	7	7	9
Albany Orphan Asylum.....	1	0	0	0	0	0	3	0
Child's Hospital.....	1	0	0	0	0	0	0	0
County House.....	4	0	6	0	5	1	0	0
Home for Aged Men.....	1	0	2	1	2	0	0	0
Dominican Convent.....	0	0	0	0	1	0	0	0
Home of the Friendless.....	1	1	0	0	1	0	1	1
Homeopathic Hospital.....	0	0	5	1	3	0	2	1
Hospital for Incurables.....	0	0	0	0	2	0	1	0
House of Shelter.....	0	0	0	0	0	0	0	0
Little Sisters of the Poor....	0	0	1	0	0	0	1	0
Penitentiary	0	0	0	0	0	0	0	1
Public Places.....	0	0	1	1	0	2	1	0
St. Margaret's House.....	1	0	0	0	0	0	3	2
St. Peter's Hospital.....	2	0	3	0	3	1	5	0

Births at term.....	67
Still births.....	2
Premature births.....	0
Marriages	49

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1901	1902	1903	1904	1905
Typhoid Fever.....	3	9	4	8	2
Scarlet Fever.....	15	2	10	20	5
Diphtheria and Croup.....	74	29	22	24	7
Chickenpox	7	9	6	6	1
Measles	60	27	134	25	201
Whooping-cough	2	0	2	0	0
Consumption	1	0	2	4	0

Contagious Diseases in Relation to Schools

	Reported.		Deaths.	
	D.	S. F.	D.	S. F.
School No. 5.....	2	.....	2	.....
School No. 6.....	1	.....	.....	.....
School No. 22.....	.....	3	.....	.....

Number of days quarantine for diphtheria:

Longest..... 46 Shortest..... 6 Average..... 26

Number of days quarantine for scarlet fever:

Longest..... 43 Shortest..... 21 Average..... 29 5-6

Fumigations:

Houses..... 16 Rooms..... 22

ANTITOXIN.

Cases of diphtheria reported.....	7
Cases of diphtheria in which antitoxin was used.....	6
Cases in which antitoxin was not used.....	1
Deaths after use of antitoxin.....	1

PLUMBING INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation, there were three hundred and sixty inspections made, of which two hundred and fifty-six were of old buildings and one hundred and four of new buildings. Forty iron drains inspected, forty connections with street sewers forty-five tile drains, twenty cesspools, seventy-one wash basins, seventy-eight sinks, sixty-nine bath tubs, thirty-five wash trays, one hundred twenty-two tank closets, one hundred seventy-one permits issued for plumbing purposes and sixty-two for building purposes. Forty-six plans were submitted of which twenty-nine were for new buildings and seventeen for old buildings. Four houses tested on

complaint, one with peppermint and three with blue, and there were eight water tests made. Thirty houses were examined on complaint and forty-two reinspections were made, and twenty-one complaints were found valid and nine were found to have been made without cause.

In the Bureau of Nuisances there were fifty-four complaints made, of which 8 were privies, 8 of closets, five of drains, four of plumbing, three of sewer water, four of filthy yards, one of filthy alley, four of filthy premises, nine of garbage, one of chicken, one of dog, one of gas, one of smoke, one of odors and three unclassified. There were fifty-three inspections and sixty-three reinspections and eighty-seven notices served.

There were twenty-four mercantile certificates issued to children and three factory certificates issued to children.

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A special meeting of the Medical Society of the County of Albany was held in the College Library on Friday, April 7, 1905, at 5 P. M. to take action upon the death of Dr. Fred. Sauerbrie, of Clarksville.

Eulogies of the dead were given by Dr. Case, who had attended Dr. Sauerbrie, Dr. Myers, who was historian of the class and a former room-mate of the deceased member, and by Dr. Tucker.

Dr. MYERS also read a letter received from Dr. Sauerbrie a short time before in response to his inquiry for his history since graduation, for publication in the decennial reports of the classes of the College.

Dr. MOSHER moved that the President appoint a committee to draw up suitable resolutions for presentation to the Society at its next meeting.

Seconded, carried.

The PRESIDENT appointed Drs. Myers, Case and Cook.

On motion the Society adjourned.

JAMES F. ROONEY, *Secretary*.

JAMES P. BOYD, *President*.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A regular meeting of the Medical Society of the County of Albany, was held in Alumni Hall, Wednesday evening, April 12, 1905. The meeting was called to order by the President at 8:45 P. M. The following members were present: Drs. Bedell, Boyd, Case, Cox, Craig, Curtis,

George, Gutmann, Hun, Laird, Lempe, Lipes, Lomax, Macdonald, MacFarlane, Moore, C. H., Mosher, Neuman, Pearce, Rooney, Ryan, Shaw, Sheldon, Stanton, Theisen, Traver, Vander Veer, A., Vander Veer, J. N., Winne, C. K.

Dr. PEARCE moved that the minutes of the previous meeting be accepted as printed in the Annals. Seconded, carried.

The SECRETARY read the resolutions presented by the Committee appointed to take action on the death of Dr. Sauerbrie, which were accepted and ordered spread upon the minutes of the Society. A copy was also ordered sent to the widow of the deceased member. The resolutions follow:

Whereas, It has pleased Almighty God, in His wisdom, to take from us our associate Dr. Fred Sauerbrie, and we must now strike forever from the roll of active membership, his name,

Resolved, That this society is deeply sensible of the loss it has sustained in his death and that his memory will be perpetuated by reason of his many kindly qualities, his loyalty to friends and his love for his chosen profession,

Resolved, That this society tender to his family its sincerest sympathy. The loss they mourn is also felt by us, and we desire to inscribe here to his memory the expression of our high esteem of his character and professional worth, and of our deep sorrow at his early demise.

Resolved, That a copy of these resolutions be transmitted to the family of the deceased, and that this estimate of his worth be placed upon our Minutes.

CHARLES L. MYERS,
D. C. CASE,
D. H. COOK.

The SECRETARY reported the application of Dr. J. A. Sampson for membership in the Society which was referred to the Board of Censors for action.

Dr. STANTON then read the first paper of the evening on "A Statistical Study of the Pathological History of Appendicitis."

Dr. ALBERT VANDER VEER said that the paper seemed so thoroughly prepared and covered the subject in so novel a way that it should not be allowed to pass without discussion. It was however, quite difficult to discuss without tables. He said that he was impressed with the mortality as it rose so rapidly after the third and fourth days, and further by the number of cases in which adhesions were encountered after the tenth day. He would like to inquire whether the appendices which were apparently normal might not have given symptoms requiring removal. Altogether the paper was one which required careful reading in the quiet of the study for its proper appreciation.

Dr. MACDONALD said that this paper presented very much from the pathologist's standpoint which had not been shown before. It also again demonstrates the fact which he had constantly reiterated that

there was great need for the pathologist, physician and surgeon to come together that the problems of this disease may be solved broadly.

What Dr. Stanton meant by abscess and what the speaker meant by abscess might be a very different thing. The condition of an appendix may be very different at the operating table from what it is when it reaches the laboratory. It appears from this paper that the first day is the one which shows distinctive symptoms. The speaker said, however, that he thought he could demonstrate specimens showing an infinite variety of lesions occurring on the first day of the disease. He also thought that without any doubt, perforation might be the first symptom of an attack. He recollected showing specimens to this Society in which perforation had appeared within twenty hours of the onset. The appendix may leak bacteria, feces or enteroliths. In the latter instance perforation may be, as he had remarked, the first symptom. Bacteria may, however, leak through the intact walls of the appendix without seeming lesion. The ensuing state of affairs depends on the presence or absence of local plastic adhesions, which may or may not wall the process off from the general peritoneal cavity. In a number of cases of abscess—and the surgeon means a localized condition when he says abscess—the symptoms are not so intense nor is the death rate so high as in the acute perforative cases. Abscess which presented itself after the third day had not, he felt sure, the high mortality represented on the chart. Those cases showing early severe symptoms occurring before the third or fourth day are the ones showing a correspondingly high mortality. These also are the cases in which the walling-off process is deficient. These are the cases in which when the abdomen is opened the intestines pour out of the wound, much distended and showing varying colors and conditions of the peritoneal coat. They greatly resist reduction and frequently are accompanied by an effusion of dirty reddish serum. These cases surgeons do not call abscess; they are cases of general infection of the peritoneal cavity. He has seen patients recover after this condition of things was present, in which the intestines showed any or all kinds of color change, but he had never seen a patient recover whose intestinal peritoneum had lost its gloss. In general it seemed to the speaker that the paper in a way proved his statement made at a former meeting that we should risk the mortality of the first twenty-four to forty-eight hours rather than wait in hopes of amelioration and then chance the very much higher mortality of a later operation.

Dr. STANTON in closing the discussion said that his reason for taking up this work was that he might have a better idea of what might be expected at varying periods after the onset and whether these conditions were reasonably constant in all cases. He felt that his paper showed, surprisingly even to himself, the constancy and progressive character of the lesion in practically all cases of appendicitis. As regards the question asked by Dr. Vander Veer he would say that the appendices presenting a normal appearance were not removed with other organs, but seemed to have given clinical symptoms.

Dr. SAMPSON read his paper on "Cancer of the Uterine Cervix."

Owing to the lateness of the hour and the further business of the Society there was no discussion.

Dr. LEMPE read his paper which will appear in a future number of the Annals.

Dr. PEARCE then exhibited many Kaiserling-formalin-jelly permanent pathological specimens.

On motion the Society adjourned.

JAMES F. ROONEY, *Secretary*.

JAMES P. BOYD, *President*.

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—Number of new cases 77, classified as follows: Dispensary patients receiving home care, 5; district cases reported by health physicians, 1; charity cases reported by other physicians, 33; patients of limited means, 38; old cases still under treatment, 51; total number of patients under nursing care during the month, 128. *Classification of diseases*, (new cases)—Medical, 22; surgical, 7; gynaecological, 2; obstetrical work of the Guild, 20 mothers and 20 infants under professional care; dental, 3; eye and ear, 1; skin, 1; throat and nose, 1; removed to hospitals, 5; deaths, 3.

Special Obstetrical Department: Number of obstetricians in charge of cases, 4; attending obstetricians, 3; medical students in attendance, 3; Guild nurses, 4; cases, 3; number of visits by head obstetrician, 3; by attending obstetricians, 16; by the medical students, 15; by the Guild nurses, 36; total number of visits for this department, 70.

Visits of Guild nurses (all departments): Number of visits with nursing treatment, 1,000; for the professional supervision of convalescents, 221; total number of visits, 1,221. Six graduate nurses and five assistant nurses were on duty. Cases were reported to the Guild by one of the health physicians and by 34 other physicians, and by three dentists.

SUMMER COURSES, UNIVERSITY OF PENNSYLVANIA.—The University of Pennsylvania is now conducting a course in medicine and surgery which will last during the months of May and June. It is designed to offer instruction of a purely practical character to the surgeon and general practitioner who wish to revive or complete their knowledge of certain subjects and to advanced students of medicine who may not have had opportunities to pursue these courses of study. The course covers all of the specialties as well as very complete laboratory courses. For further particulars apply to Dr. Charles H. Frazier, Dean, 36th Street and Hamilton Walk, Philadelphia, Pa.

ASSOCIATION OF HOSPITAL SUPERINTENDENTS.—The Seventh Annual Meeting of the Association of Hospital Superintendents will be held in Boston on September 26-29, 1905. It is proposed to devote four mornings and two afternoons of the above dates to sessions, leaving two afternoons open for excursions, etc. The headquarters of the association will be Hotel Vendome, where special rates have been secured for members and their friends. The executive committee is preparing a very interesting program. Members of the association and others eminent in their callings have agreed to present papers.

LIBRARY OF SCIENCE, CALCUTTA.—After a year's trial it is announced that the object for which this library was instituted, namely, that of placing in the hands of the medical profession of India the very latest methods in the medical and surgical world by means of the late books and journals, has been very successful. The institution counts among its supporters many leading publishers and authors of this country and Europe and has been presented with a goodly number of books and scientific journals and periodicals. The managers of the library will be very glad to receive any works or publications which may be of value to our fellow practitioners in that far off land.

MODERN CLINICAL MEDICINE.—D. Appleton & Co. expect to publish at short intervals a translation of "Die Deutsche Klinik," a publication which is being brought out in parts in the German language. The articles upon the various diseases have been written by the most eminent men in Germany. It is the plan to publish this work in several volumes, the entire work to be translated and edited under the general supervision of Dr. Julius L. Salinger, of Philadelphia. The first volume of Modern Clinical Medicine, "Infectious Diseases," was published on the third of May. The second volume, which will appear shortly, will consist of "Constitutional Diseases and Diseases of the Blood."

POST-GRADUATE COURSES, MCGILL UNIVERSITY.—The tenth regular post-graduate courses will be given by the faculty of medicine of McGill University during the month of June, beginning Monday, the fifth. During this session it has been decided to make each course optional, attaching thereto a special fee. The program, speaking broadly, includes general clinics and special courses, and the courses cover general medicine, surgery, and most of the specialties. Further particulars may be had upon application to John W. Scane, Registrar, Montreal, P. Q.

SPECIAL COURSES, NERVOUS SYSTEM.—Dr. M. P. Prout, of 204 West 55th Street, New York City, who has attained considerable eminence as a nerve specialist, announces that he will give during the summer private courses on the anatomy, physiology, and pathology of the central nervous system. These courses will consist of macroscopic and microscopic demonstrations of slides and specimens, the teaching of methods and the technique of staining. The course, anatomical arrangement, and evolution of the tracts of the brain and spinal cord will receive special attention.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otolaryngology, Rhinology, Laryngology, Hygiene and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by A. O. J. KELLY, A. M., M. D., Philadelphia, U. S. A. With the Collaboration of WM. OSLER, M. D., Baltimore; JOHN H. MUSSER, M. D., Philadelphia; JAS. STEWART, M. D., Montreal; J. B. MURPHY, M. D., Chicago; A. MCPHEDRAN, M. D., Toronto; THOS. M. ROTCH, M. D., Boston; JOHN G. CLARK, M. D., Philadelphia; JAMES J. WALSH, M. D., New York; J. W. BALLANTYNE, M. D., Edinburgh; JOHN HASOLD, M. D., London; EDMUND LANDOLT, M. D., Paris; RICHARD KRETZ, M. D., Vienna. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad., Volume IV, Fourteenth Series, 1905. Philadelphia and London; J. B. Lippincott Company, 1905.

The section on treatment contains four articles, the first of which is "The Excessive Use of Drugs in the Treatment of Chronic Diseases, with Reference to Medicinal Intoxication," by Dr. George Hayem. It would be well for some of us to put this quotation where we could see it often. "Slow intoxication by drugs is the greatest danger that a patient with some chronic disorders runs." In "Indications for the Dechloridation Treatment," Dr. Adolphe Javal reports the results of more investigations on this subject, including two cases, one with temporary and the other with permanent impermeability of the kidneys to sodium chloride. Dr. F. Lejars writes on "The Treatment of Patients Who Seem Disperately Ill in Consequence of Accident, Hemorrhage, or Infection," and shows that the surgeon is justified in operating on desperate cases if certain signs of impending death are not present and that injections of artificial serum are of great temporary value.

In the section on Medicine, F. Parkes Weber, M. D., F. R. C. P., and J. H. Watson, M. B., B. S., have a paper on chronic polycythemia with enlarged spleen in which they report a case with autopsy in which the yellow bone marrow was largely replaced by red marrow. A good clinical lecture by Dr. Solomon Solis Cohen is reported illustrating the importance of pathologic and etiologic diagnosis in inflammations of the joints and nerves. In "Functional Heart Murmurs; Their Causation and Diagnosis," Dr. Robert Dawson Rudolf expresses the belief that these murmurs are not directly due to anaemia, as they often occur in persons who are not anaemic. He thinks that in the athlete tricuspid and mitral murmurs are due to high intra-ventricular pressure, and in the debilitated, to decreased tone of the sphincter, allowing dilatation of the orifices. After considering the many causes given for functional murmurs at the

pulmonary and aortic valves, he concludes that they are due to dilatation of the pulmonary artery.

In the section of surgery Dr. E. H. Bradford contributes for the general practitioner a profusely illustrated article on "Lateral Curvature of the Spine," and three of the clinical lectures are on orthopedic surgery. In "The Operative Treatment of Constipation," W. Arbuthnot Lane, M. S. (Lond.), advocates joining the ilium to the sigmoid flexure or the rectum in certain cases of chronic constipation. In "The Symptomatology and Diagnosis of Glenard's Disease," Dr. A. Ernest Gallant begins a series of articles on enteroptosis and in this paper considers the clinical classification, methods of investigation and symptomatology.

In the section on pathology Dr. Alfred Scott Warthin writes on "Recent Investigations Concerning the Pathology of the Infectious Diseases," and gives a critical summary of the work which has been lately reported. In "The Etiology and Pathology of Amoebic Infection of the Intestine and Liver" Dr. Charles F. Craig considers the work of others and reports the results of his own investigations. He is convinced that there are two varieties of intestinal amoebae—one pathogenic, the *entamoeba dysentericae*; the other nonpathogenic, the *entamoeba coli*, and that the former causes a form of dysentery with a distinct gross and microscopical pathology.

R. G. C.

Eye, Ear, Nose, and Throat Nursing. By A. EDWARD DAVIS, A. M., M. D., Professor of Diseases of the Eye, in the New York Post-Graduate Medical School and Hospital, and BEAMAN DOUGLASS, M. D., Professor of Diseases of the Nose and Throat, in the New York Post-Graduate Medical School and Hospital. With 32 Illustrations. Pages XVI-318. Size, $5\frac{1}{2} \times 7\frac{1}{8}$ inches. Extra Cloth. Price \$1.25 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

This little book should be a welcome addition to medical literature, because it is one of the few books devoted exclusively to a consideration of nursing in eye, ear, nose and throat diseases, and should prove a valuable guide to the nurse, for the intelligent care of these diseases.

The methods of preparing the numerous antiseptic and sterile solutions have been given in detail, and the proper methods for making applications to the eyes and douching the ears, the preparation of dressings, etc., have been thoroughly considered.

In the portion of the book devoted to nose and throat nursing, the author in considering the operation for the removal of adenoids and enlarged tonsils, under general anesthesia, states that the inspiration of loose blood-clots may be prevented, if the operation is performed with the patient's head hanging over the edge of a table; but immediately after he says, that he always proceeds with the operation, until he is fairly certain that blood has entered the larynx and respiration is impeded. The patient's head is then drawn quickly over the end of a table, and by rapid finger strokes upon the trachea and larynx, the clots are again forced to the mouth.

The chapter devoted to "what to do in emergencies" is an excellent one, and particularly valuable to the nurse.

The book is well illustrated, and may be heartily recommended to the profession.

C. F. T.

The International Medical Annual: A Year Book of Treatment and Practitioner's Index. Collated by Thirty-six Department Editors. Bound in Cloth, Fully Illustrated. 8 v. 600 pages. \$3.00. New York: E. B. Treat & Co.

The twenty-third volume of this medical annual shows no diminution in its value as a ready reference and a suggestive aid to the medical practitioner.

Part one consists of a view of the year's progress in therapeutics and a list of the newer drugs, arranged by Professor Ralph Stockman, of Glasgow, Scotland. Part second includes all the recent advances in general medicine, embracing especially diagnosis and treatment. In this section space is wisely given to the different subjects according to their comparative importance at this time. Arterio-sclerosis is clearly depicted by six illustrations and the advisability of the surgical treatment of Bright's disease is considered in eight pages.

The value of the X-rays in renal, vesical and ureteric calculi is shown by three plates. Diseases of the nasal accessory sinuses receive consideration in twelve pages of text and in four plates. Ten pages are given to the subject of tendon transplantation, and Mayo Robson considers in eight pages the surgery of the pancreas. These are a few examples of the completeness with which the various subjects are handled. Part third is given over to sanitary science. The volume is compact, well arranged and edited by distinguished members of the profession.

A. MACFARLANE.

Blood Pressure as Affecting Heart, Brain, Kidneys, and General Circulation; A Practical Consideration of Theory and Treatment. BY LOUIS FAUGERES BISHOP, A. M., M. D., Physician to the Lincoln Hospital, New York; Late Chairman of the Section of Medicine of the New York Academy of Medicine; Member of the New York Pathological Society; the Neurological Society; Alumni Association St. Luke's Hospital, etc. New York: E. B. Treat & Co., 1904.

In this little book of 112 pages the author discusses the subject of alterations of pressure in the blood vessels from the standpoint of clinical experience rather from a mechanical and laboratory standpoint. The subject of the actual measurement of the blood pressure by the more recently perfected instruments is not taken up. The author believes such instruments are useful but are not yet generally employed or within the reach of the majority of practitioners. He treats rather of the philosophy of those cases in which there is little room for difference of opinion as to the existence of high or low pressure. He classifies cases showing alterations in blood pressure as: primary low-pressure cases, high-pressure cases, secondary low-pressure cases. The management of each class is discussed and many suggestive and pertinent points are brought out and emphasized.

A. T. L.

NEW YORK STATE MEDICAL LIBRARY

Edited by Miss Ada Bunnell, B. L. S.

Hours of opening. The library is open for readers and borrowers each week day from 8 a. m. to 10 p. m., including Saturdays and holidays, except during July and August, when it closes at 6 p. m.

Loans. Books can be lent to any registered physician, but will be delivered only on personal application or on a written order, by which full responsibility for books so delivered is assumed.

Loans outside of Albany. Books will be lent by the medical library to any registered physician outside Albany, provided:

1. That such precautions be taken in packing, as to guard against any probability of injury in transportation.

2. That the medical library shall not pay postage or express either way.

The library is collecting articles on minute subjects and will be glad to receive gifts of reprints of articles in magazines from authors or publishers.

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ALBANY MEDICAL ANNALS

Original Communications

THE PRESIDENT'S ADDRESS

Delivered at the Annual Meeting of the Medical Society of the County of Albany, May 9th, 1905.

By JAMES P. BOYD, A. B., M. D.,

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It has long been a custom for the President to deliver an address on some subject relating to the Science of Medicine at the Annual Meeting of this Society.

On this occasion, however, in the Centennial Year of the Society, it seems fitting that I should invite your attention to some facts relating to its history. In the year 1800 Albany was already an old city. About this time a few New England families were added to its population. Previously it had been entirely Dutch. Its people, its habits, its architecture were all Dutch. In a population of five thousand there were not more than five New England families. The city had no pavements and no street lamps. It had little or no foreign commerce.

At last came a feeling of unrest, and the progressive spirit of the century disturbed the repose of the city. The general character of the medical profession began to improve. Although the French War and the War of the Revolution brought into prominence many excellent physicians, the means of education had been very limited, and the mass of practitioners throughout the country were ignorant. In an address before the Regents, Dr. T. Romeyn Beck stated that of the seven hundred physicians in the State at this time, not more than twenty held the degree of Doctor of Medicine. In fact, it was not sought for, except in the large cities.

The education of physicians prior to 1750, unless obtained in Europe, was restricted to a sort of apprenticeship and personal

instruction. In 1750 the first regular medical instruction was attempted, a course of lectures on anatomy being given in New York by a Dublin graduate, Samuel Clossy. Before the close of that century four medical schools were established; in Philadelphia, New York, and at Harvard and Dartmouth Colleges. A medical education at that period would be hard to define. It was difficult to acquire a practical knowledge of anatomy by dissection. Surgery was rude and simple when viewed from the light of to-day. Nothing was known of auscultation and percussion. There was but little knowledge of the control of epidemics. Pharmacy was as rude as the means of diagnosis, but faith in it was profound. Oliver Wendell Holmes, from vivid recollections of his early life, graphically describes the physician of the day: "He would look at the tongue, feel of the pulse, and shake from his vials a horrible mound of ipecac or a revolting heap of rhubarb, good stirring medicines that meant business, but left a flavor behind them that embitters the recollections of childhood." The oldest physician in Albany at this time was Dr. Wilhelmus Mancius, the son of the Dutch dominie, who practiced medicine as well as theology in the early history of the Colony. He was now past sixty years of age, over six feet in height, and a man of great popularity. He received his education from his father. In his arguments with his younger, and more liberally educated partner, Dr. Woodruff, he saved himself from being worsted by, "Ah, de cure, Hunloke, de cure is de great ting. I cure!"

Dr. William McClelland, a Scotchman, a charter member of the County Society and its first vice-president, practiced at this time. He was a graduate of Edinburgh. Dr. Jonathan Eights, younger than the men just mentioned, was held in high esteem as a family physician, and made many contributions to medical literature.

Dr. John Stearns, a Massachusetts man, and a Yale graduate, by his persistent efforts, succeeded in procuring the law of 1806, under which State and County Medical Societies have been incorporated.

Dr. Hunloke Woodruff was a graduate of Princeton, and shortly before the beginning of the Revolution, had begun the study of medicine, and had taken up his residence in Albany. He was soon appointed surgeon of one of the New York regiments. He was with Col. Gansevoort during the siege of Fort

Stanwix, and attended Gen. Sullivan in his expedition against the hostile Indians of Western New York. After the war, he settled in Albany, and was the first President of the Albany County Society.

The event of the greatest importance to us, however, at the beginning of the last century, was the establishment of the County Medical Society. This is one of the oldest medical societies in the State, having been established in July, 1806, immediately after the passage of the incorporating law. The reason urged for the passage of this act was the fact that charlatanry and quackery prevailed to such an extent at this time as to necessitate a combination of the legitimate members of the profession to control it. Dr. R. M. Wyckoff, in a paper on early medicine, said that medical practice in early times was pure, but that about the middle of the Eighteenth Century, the charlatanry of the old world, which was quackish to the core, began to find a field in the new. The field was overrun with quacks of all kinds. The time had come for the profession to assert itself. Dr. Thomas Hun wrote, in 1844, nearly forty years after the founding of the County Medical Society, "Quackery must be suppressed, not by legislation, but by enlightened public opinion of its dangers. The respectability of our profession is to be promoted, not by asking for legal privileges, but by an increase of individual zeal and cooperation."

This society from its beginning has always been active and has maintained regular meetings for the advancement of Medical Science. It has always used its influence in controlling local epidemics and unsanitary conditions. Its advice has frequently been sought by the Mayor and Council of Albany. Its laws for disciplining unprofessional members are strict and just. It has perpetuated the memory of its deceased members by printed biographies. The entire transactions of the Society have been printed in three volumes of 400 or 500 pages. The first was prepared by Dr. S. D. Willard, and extends to 1850; the second, chiefly by Dr. J. S. Bailey, covers the next twenty years; and the third, chiefly by Dr. F. C. Curtis, is filled by the ten years following, down to 1880. These volumes contain biographies of nearly two hundred members, and a number of portraits of deceased and prominent members. The transactions since 1880 have been published in the *MEDICAL ANNALS* a monthly journal, managed by an editorial committee under

the control of the society. Since 1891 this journal is published as the ALBANY MEDICAL ANNALS, representing the Alumni Association of the Albany Medical College. Few societies in the country have done more in the matter of publication.

The great cholera epidemic in 1832 made its first appearance on this continent at Quebec, and two weeks later broke out in Albany. It created great alarm. At the request of the Mayor, a meeting of the Medical Society was called to devise means to arrest its progress, and a staff was organized consisting of Drs. Eights, Wing, Greene, Boyd, Townsend, Wendell, James, McNaughton and March. The physicians of the city met every evening at the City Hall, where an album was kept in which to enter the names of the deceased. The number of reported cases was 1,147, of which 422 were fatal. Two years later there was an outbreak of the disease in which there were 124 cases with 78 deaths. No such fatal disease had prevailed since the small-pox epidemic in early history. Conspicuous among the physicians practising at this time were the brothers James and Peter McNaughton, the brothers Staats, Dr. Alden March, the famous surgeon. The Doctors Beck were both remarkable men. Dr. T. Romeyn Beck is known all over the world as the author of "Medical Jurisprudence." Both of the brothers devoted most of their lives to teaching. Dr. Thomas Hun, the learned physician, and my father Dr. James P. Boyd.

In the War of 1812 a few of the Albany physicians offered their services to the country. Among them were Dr. Platt Williams, a graduate of Williams College, Dr. Henry Greene, a native of Rhode Island. In the late Civil War a large number of the members of this Society served in the Army. Time will permit me to mention but a few of them, Drs. Vanderpoel, Quackenbush, Willard, Pomfret, Jacob S. Mosher, J. W. Moore, J. Savage Delavan, Thomas Helme, Charles H. Porter, Alexander H. Hoff, W. L. Snow, Newcomb, Craig, Boulware, Has-kins, Beckett, Staats. Fortunately we have still with us many well known physicians who served their country faithfully during the long years of the War of the Rebellion, and we may hope to hear from some of them this evening.

In the War with Spain, this Society had several of its members in the New York regiments.

The founders of this society, and those who in the long years of its existence have done so much to advance the cause of

medical science have left us a noble heritage. It remains to be seen whether we can make use of the opportunities so freely bestowed upon us. Surely with well equipped modern hospitals, with the Albany Medical College and the Bender Laboratory, this society should be earnest, progressive, and devoted to the advancement of our science.

It is with a feeling of sadness that I announce the deaths, during the past year, of three well known, earnest and faithful members—Dr. W. L. Purple, Dr. Noah L. Eastman, Dr. F. Sauerbrie.

I have two reasons for feeling a warm interest in this society. One, because my father was long ago its president, but chiefly because of the unusual action of its members in presenting him, at the completion of fifty years of practice of medicine in this city, with a testimonial of regard. I well remember the occasion, when Dr. Thomas Hun at the annual meeting, held in the common council chamber, November 14th, 1876, in an eloquent speech, presented the piece of silver, in the name of the society.

AN UNUSUAL CASE OF LARYNGEAL SYPHILIS REQUIRING TRACHEOTOMY.

Read at the Annual Meeting of the American Laryngological, Rhinological and Otological Society, held at Boston, Mass., June 5, 1905.

By CLEMENT F. THEISEN, M. D.,

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The following case, because of several rather unusual features, was considered worth putting on record.

Mrs. J., aged 38 years, married, consulted the writer for the relief of a gradually increasing difficulty in breathing. This she had noticed for nearly a year, and on any exertion, like walking upstairs, great dyspnoea always came on. There was at the time the patient consulted the writer, a well marked respiratory stridor, and the inspiratory thrill which is characteristic of laryngeal stenosis could be felt when the fingers were placed over the region of the larynx. Her first husband contracted syphilis, and also developed a pulmonary tuberculosis, of which he died. The patient's family history, however, is negative in this respect, there having been no cases of tuberculosis so far as known.

The patient herself was inoculated with syphilis by her first husband some years ago, and received a thorough course of treatment. At that time there were well marked constitutional symptoms, with necrosis of the bone in several of her toes, necessitating some operative work. No symptoms of laryngeal obstruction developed until about a year before the writer was consulted, and since then, as before stated, there had been an increasing difficulty in breathing.

On examination, the nose and naso-pharynx, with the exception of a slight naso-pharyngeal catarrh, were found practically normal. Patient had a slight chronic pharyngitis. The tonsils were not enlarged. The uvula was slightly elongated and thickened, and was infiltrated for about one half its length from the tip. This portion of the uvula was very hard to the touch. There was no ulceration, nor any evidence of former ulceration.

The entire epiglottis was infiltrated, its surface being perfectly smooth, however, and was also extremely firm to the touch.

It was pulled back to such an extent, that the laryngeal entrance was practically closed, and the only way a laryngeal examination could be made was by pulling up the epiglottis after cocainization. The epiglottis was also free from ulceration. This peculiar position of the epiglottis is probably due to old lateral syphilitic adhesions. There is considerable resistance when the epiglottis is pulled up in making a laryngeal examination. The aryepiglottic ligaments appear thickened and shortened.

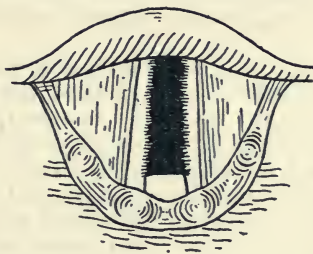
On laryngeal examination, a most interesting state of affairs was found. The glottis, with the exception of a very small opening posteriorly, was closed by a mass of cicatricial tissue stretching from side to side, just under the vocal cords. This was found to be extremely dense and unyielding when examined with a probe. Practically no changes in any other part of the larynx could be seen. The movements of the arytenoids were somewhat impaired, the result probably of an old perichondritis.

A careful physical examination of the patient was made by an excellent general practitioner who found her lungs normal. He found a right movable kidney and a digestive disorder, otherwise the patient was found to be in a fair general condition.

The sputum was examined several times with negative re-

To Illustrate Dr. Theisen's Article on "An Unusual Case of Laryngeal Syphilis Requiring Tracheotomy."

Albany Medical Annals, July, 1905.



Showing the occlusion of the glottis by cicatricial tissue. The drawing does not show the actual position of the epiglottis, which was pulled back to such an extent that the laryngeal entrance was nearly closed.

sults. The patient was told that her laryngeal condition was serious, and consented to remain in the hospital for a time. A piece of the infiltrated epiglottis was removed and sent to the Bender Laboratory for examination. The report stated that the piece removed showed simply a chronic inflammatory process. No tubercle bacilli were found in sections of the removed tissue.

Iodide of potash was administered in order to see what effect it would have on the infiltrated uvula and epiglottis. The uvula became decidedly thinner and softer, but no change in the epiglottis could be determined.

The administration of the iodide however, brought on a sudden attack of laryngeal oedema with greatly increased dyspnoea, and it was then promptly stopped. Preparations for performing tracheotomy were made, but the oedema subsided so quickly with proper local measures, that it was not required.

As the patient did not desire any further operations at this time, she was discharged from the hospital, but was kept under constant observation. During the succeeding few months, she got along fairly comfortably when she did not exert herself in any way, but finally, when attacks of dyspnoea became more frequent, she consented to a tracheotomy.

She was again admitted to the hospital and a low tracheotomy was performed. A general anesthetic was not used on account of the great laryngeal obstruction, but the operation was performed with a solution consisting of equal parts of a one-half per cent. cocaine and a 1-10,000 adrenalin chloride solution, making a solution of one-fourth per cent. cocaine, and 1-20,000 adrenalin.

In a discussion upon the fatal results of operations upon the nose and throat, (in the *Transactions of the American Laryngological Association* for 1904), I called attention to the value of this solution in performing tracheotomies. It should be put up under aseptic precautions, preferably the day of the operation, and the bottle kept under a 1-1,000 solution of bi-chloride, until the solution is drawn into a sterile hypodermic syringe after the patient's neck is prepared for the incision. It is only necessary to inject a few minims at different points along the line of incision. It is an ideal solution for tracheotomies in adults. I mean of course in cases in which the patient

is in no immediate danger of death, so that the operator can take his time.

The use of a general anesthetic in cases where there is some form of laryngeal obstruction, and that is usually the condition for which a tracheotomy is performed, is not safe.

In emergency cases, where the patient is in imminent danger of death the operator would of course not lose time in using *any* anesthetic at all, either general or local, nor could a local anesthetic of this kind, be used in performing tracheotomies on children or very nervous adults. It should only be used in selected cases. The addition of even such a weak solution of adrenalin chloride to the cocaine solution, has distinct advantages, as it assists in preventing the possible unfavorable effects of the hypodermic injection of cocaine.

The writer's patient complained of very little pain during the operation, and it certainly adds very materially to the comfort of the operator, if he is able to take his time in performing a tracheotomy.

The further history of this case is of no great interest perhaps, except that the gain in the patient's general condition has been quite remarkable.

At the time of the operation she was much reduced, and since then she has gained over thirty pounds in weight. She is still wearing the tracheotomy tube, and will probably continue to do so for some time. She has been told that a radical operation, consisting of a thyrotomy, with a careful removal of the cicatricial tissue, might relieve the breathing to such an extent that she would be able to permanently discard the tube. Up to the present time however, I have not been able to get her consent, as she is so well satisfied with her condition. There is no way of dilating this stricture from above as the cicatricial tissue is so absolutely unyielding.

The question as to just what to do in such severe cases is an interesting one. We must always be prepared to perform tracheotomy, and must bear in mind a statement of Simpson's¹, "that all cases of laryngeal or tracheal stenosis however gradual, may at any moment take on a sudden exacerbation." The proper method of getting rid of the laryngeal stenosis after tracheotomy is of great importance.

J. Payson Clark² has reported an interesting case of probable syphilitic stenosis of the larynx in a young adult, on whom a

tracheotomy had been performed for increasing dyspnoea. Dr. Clark was unable to pass intubation tubes, so while the patient was under ether, the tracheotomy tube was removed, and gradually larger sizes of female urethral sounds were passed through the tracheal opening and up into the larynx. A pair of long, narrow, slightly curved forceps, was then passed up through the tracheal opening and through the glottis. The intubation tube was put on the forceps, which was then pulled back through the tracheal opening until the intubation tube was properly adjusted. The patient however, unfortunately, coughed out the tube, and as he would not consent to have it reinserted the tracheotomy tube had to be put back when he left the hospital. This method would probably not be applicable to cases of syphilitic stenosis, in which, as in the writer's case, the cicatricial tissue practically occludes the glottis, and is so dense. The patency of the glottis would first have to be restored by removing the cicatricial tissue by a laryngo-fissure, after which this method would undoubtedly be very useful.

In cases of simple syphilitic stenosis of the larynx, caused by infiltration and thickening of the cords and ventricular bands, or perichondritis, with oedema of the mucous membrane, intubation with gradually larger tubes, preceded in all severe cases by a tracheotomy, is I believe, the best treatment.

The writer has had several cases of this sort, in one of which the stenosis was in the trachea, well below the glottis, and could be finally dilated with Schrötter's tubes.

A preliminary tracheotomy in severe cases of syphilitic stenosis of the larynx, should be performed perhaps in the majority of the cases. Then the operator can work from above, without the danger of an attack of sudden oedema and asphyxiation of the patient.

There are many cases of syphilitic stenosis of the larynx on record, in which tracheotomies had to be performed for increasing or sudden alarming dyspnoea. I will not take your time in considering them in detail.

Such cases have been reported by, Jéannè⁸, Leonard⁷, Navratil⁹, Descos¹⁴, Stein¹⁰, Hall¹⁹, Clark,² Woods¹⁸, Spencer⁶ and others. In the cases reported by these authors, the stenosis was caused by infiltration and thickening of the vocal cords, and ventricular bands, and not by cicatricial tissue stretching between the cords.

In a fairly careful search of the literature of the past ten years, not many cases were found in which the stenosis was produced by cicatricial tissue occluding the glottis by uniting the cords, or extending across the trachea.

Cases of this kind have been reported by Bleyer,¹⁷ Moritz²¹, Collinet¹², Echtermeyer¹⁴, Heymann⁸ and Hubbard¹². In Hubbard's case the diagnosis of syphilis was not absolutely positive. I was only able to find a few reports of cases in which the peculiar position of the epiglottis closing the laryngeal entrance was present.

Navratil¹⁸ and Zwillinger¹¹ have reported such cases.

Bleyer¹⁷ has reported eight cases of syphilitic stenosis of the larynx caused by a web formation. They were operated on by his combined method of tubage and the knife. He first cut through the membranous formation with Lenox Brown's sharp dilator, and then quickly dilated with intubation tubes.

In Hall's case¹⁹ of syphilitic stenosis a tracheotomy had to be performed and the patient died after coughing out the tube.

In Moritz's²¹ case there were adhesions uniting the cords in a young woman, aged twenty-four years. A tracheotomy was performed.

Collinet¹² has reported a case of syphilitic stenosis of the larynx in which cicatricial tissue took the place of the cords and ventricular bands.

In Echtermeyer's¹⁴ case there was a membrane uniting the cords and almost closing the glottis. A tracheotomy was performed, after which the membrane was removed, and intubation practiced until the patency of the larynx was restored.

In a case reported by Spencer⁸, the stenosis was caused by the presence of firm irregular masses of tissue which covered the vocal cords and ventricular bands. This was removed by thyrotomy.

In Descos's¹⁸ case a tracheotomy was performed for extreme dyspnoea, and later a laryngo-fissure was made, and the soft parts of the larynx resected. There were no adhesions in this case.

Navratil¹⁸ has reported two cases in which tracheotomy had to be performed for laryngeal stenosis caused by syphilis.

Heymann⁸ has reported a number of cases in which membranous adhesions existed in the larynx. He does not give the exact number of cases.

In a case recorded by Sargnon,⁴ daily intubations had to be performed before the stricture was permanently dilated.

Navratil²⁰ and Zwillinger¹¹ have reported cases in which the epiglottis was pulled back, (as in the writer's case), to such an extent that the laryngeal entrance was closed.

In Zwillinger's case there were adhesions between the epiglottis and aryepiglottic folds. In Hubbard's case¹² a thyrotomy was performed and the membrane uniting the cords removed.

CONCLUSIONS.

(a.) Intubation is particularly useful in the cases in which the stenosis is not extreme, and when it is caused by a thickening and infiltration of the cords and ventricular bands, thus narrowing the glottis. In some such cases intubation may be carefully used without perhaps preliminary tracheotomy.

(b.) When the stenosis is extreme, or when membranous adhesions exist between the cords, leaving only a very small opening, a tracheotomy should precede attempts to dilate the stricture from above. It is in such cases that a sudden oedema may be fatal before an intubation tube could be properly adjusted.

(c.) Tracheotomy, followed by laryngo-fissure, offers the best chances of a permanent cure when there is much cicatricial tissue occluding the glottis by uniting the cords or stretching across the trachea.

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THE LIGHT TREATMENT OF DISEASE.

By J. H. ADAMS, M. D.,

Paoli, Pa..

The mystery and hope of the profession to-day is centering more and more in the so-called "light treatment." Such a treatment if successful is as ideal as could be devised by poet's fancy. Observers are wide awake and working night and day, for example: Werner has been working most extensively on the biologic action of radio-active lecithin. It has been found that lecithin exposed to the action of radium or X-rays, changes in some way so that it is more readily decomposed and more easily attacked by autolytic ferments; the lecithin in the cell being destroyed, in turn this entails the destruction of the cells. The radio-chemical processes seem to be analogous to the photo-chemical; like the sensitized salts, the lecithins by the action of the rays, are made more easily destructible and without undergoing any apparent chemical modifications, they decompose more rapidly when exposed to certain conditions as contact with the "developer" in the first case so contact with the autolytic ferments in the second. This analogy seems more striking if we believe that the biologic action of light is due to the chemically active rays. As yet experiments with the different components of lecithin showed that none of them was the specific agent; the total lecithin seems to be required for the process. It is now known

that a radio-active lecithin loses its activity after decomposition.

There is a possibility of using local injection of radio-active lecithin as a substitute for exposure to radium and Röntgen rays. Werner tried large doses by intravenous or subcutaneous injection which killed rabbits, but multiple small doses in loose connective tissue were not followed by an appreciable local reaction, which suggests the possibility that in radio-active lecithin there is a therapeutic factor of incalculable scope as an accumulator for a biologic action of the radium and X-rays. It is certainly a brilliant theory if no more.

Now comes the brilliant idea of using ultra violet rays in locomotor ataxia. Liebermann in a recent issue of the New York Medical Journal reports the results he has obtained in treating thirty-six cases of this disease in this way, their ages ranging from 24 to 63. Four were restored to good health, returning to their usual business; twelve have been benefited greatly while in eighteen cases the disease was apparently arrested, while only two patients died, one from pneumonia and one from erysipelas. In the twelve benefited, the power of co-ordination was restored, pain abolished and the ability to use the upper and lower limbs without any assistance returned. All are able to rise, to dress and to undress themselves without help, and are sometimes even able to perform such delicate operations as fixing the necktie or tying their shoes. In the 18 cases where the disease is apparently arrested there is hope of further improvement and final restoration of different functions. These cases had for years been receiving different forms of treatment, and while some improvement had followed from these methods, none of them had made such gratifying progress as since trying "the ultra-violet ray" treatment. Liebermann's process is as follows: for the dehematization he uses the cataphoric electrode (with a round piece of lint) saturated with adrenalin chlorid (1 to 1,000); then a pad with zinc plate is applied to the abdomen, leaving it on for from three to five or ten minutes. The static machine is used for exciting the ultra-violet lamp with the large Leyden jars as condensers; the lamp being connected by its conducting cords to the outer surface of the jars. Liebermann believes that it is possible that its powerful stimulating effect induces more activity in the natural healthy cell and diminishes the nutri-

tion of connective tissue setting up a more active local metabolism; or, that it induces a local accumulation of heat energy and a congestive process through which neutrophile leucocytes are caused to immigrate in the vicinity of the degenerated cellular elements. Of course the application of the ultra-violet ray to dehematized tissue must be made with great judgment; it should never be applied to more than two localities at a time, and the area treated should be varied so that every day a different region of the cord is exposed. Liebermann treats alternately the cervical, lumbar and sacral regions; and his routine treatment is as follows: 1. A warm half-bath at night before going to bed with light massage. 2. Ultra-violet rays in sittings of from ten to thirty minutes, three times a week. 3. Static electricity by means of the Morton wave current or wooden brush daily, from fifteen to twenty minutes.

From England comes excellent reports of the use of the X-ray in leukemia. Ledingham and McKerron in the report of a case of a boy found its use of great benefit; before they began treatment, there was marked distension of the abdomen owing to an enormous splenic enlargement; the lower border reached to within a finger's breadth of the pubes, while the anterior border extended two inches beyond the middle line. Blood examination showed the characteristic changes of leucocythemia of the splenomedullary type, red cells, 3,570,000; white cells, 234,000, and hemoglobin, 80 per cent. The differential count showed: Myelocytes, 48 per cent., polymorphonuclears, 39 per cent., small and large lymphocytes, 8 per cent., mast cells, 6 per cent., and nucleated red cells, 4 per 100 white cells. The X-rays were applied over the splenic tumor and the lower epiphyses of the femor; and occasionally over the sternum and vertebrae, the exposures lasting ten to fifteen minutes every alternate day, but for a period daily exposures were tried with no ill effects. Throughout the three months of treatment except from slight prickling sensations, lasting for a short time after the application, there was never any nausea, headache, nor rise of temperature traceable to the X-ray treatment. The vacuum tube was always fixed at a distance of somewhat over five inches from the area exposed. As a result one month after treatment a marked erythema appeared over the splenic area, but it subsided in a few days; within six weeks the leucocytes dropped to 23,000. On one

occasion they dropped to 17,800. The mean of the red cells was about 4,500,000, and on several occasions counts of over 5,000,000 were recorded. The hemoglobin appeared to remain fairly stationary at from 55 to 60 per cent. The ratio of polynuclears to myelocytes rose from 0.5 before the X-ray treatment to 2, but the myelocytes, showed no tendency to disappear altogether, and the blood did not return to normal proportions. Before treatment the patient was more or less bedridden, walking being difficult and breathlessness on exertion; but within a month after the commencement of treatment he felt better and was able to walk, and even climbed stairs. The abdominal girth was diminished about two and a half inches within four months, and in the same length of time he gained 12 pounds in weight. The splenic tumor was markedly softer on palpation and is constantly diminishing in size, at the time their report was published in January of this year.

The X-ray has been tried successfully in obstinate cases of eczema with great success; Hahn reports two cases which resisted every line of treatment until the X-ray was used, with the result that a permanent cure followed.

It has been known since the world began that sunlight exerts a beneficial effect on health; thus the Italians say: "Where sunlight does not enter, the doctor does." But it is only in recent years that the sun's rays and other rays have been used therapeutically. About the time of the centennial exhibition, in Philadelphia, General Pleasanton devised his "blue glass treatment" but he was laughed out of serious consideration. He lived thirty years too soon. Much of our recent knowledge is due to the late lamented Dr. Finsen who developed the red light treatment of the exanthemata. His treatment of smallpox is based on the following propositions.

(1) As the chemical (blue, violet, and ultra-violet) rays of light are capable of causing an inflammation (erythema solare) of the healthy skin, it is assumed that they would equally be capable of aggravating pre-existing inflammations. (2) If the diseased skin were protected against the injurious action of the chemical rays of light, it will be possible to diminish the intensity of the inflammation, and thus prevent suppuration. (3) The object is to exclude the chemical rays of light which are injurious to the skin. Finsen's method consists then in the treatment of local superficial bacterial skin diseases by

the concentrated chemical rays of light. But the strongest sunlight unconcentrated is too feeble in bactericidal properties for therapeutic uses; if this were not true all bacterial skin diseases would cure themselves in the summertime. So Finsen's method is as follows: In the treatment of patients, sunlight is used in the summer when the sky is bright, at other times the light of electric arc lamps of 50 to 80 amperes; it is only by concentration that the light becomes so powerful that its bactericidal property can be used therapeutically. To eliminate burning the skin it is necessary to cool the light; this double object—to make the light stronger and cooler—is attained, in regard to sunlight by an apparatus, consisting of a lens of from 20 to 40 cm. in diameter, composed of a plain glass and a curved one, framed in a brass ring, while between them there is a bright blue, weak, ammoniacal solution of copper sulphate. As one surface of the liquid is plain and the other curved, its optical function is that of an ordinary plain convex glass lens. By the ingenious thought of making the lens of a blue liquid instead of solid glass, considerable cooling of the light is obtained, as water absorbs the ultra-red rays, and the blue color excludes a considerable amount of red and yellow rays, for these three kinds of rays have strong heating effect, although their bactericidal power is poor. The blue, violet, and ultra-violet rays, which it is important to collect in as large a number as possible, are but very slightly impaired by passing through the blue liquid. The lens can be raised and lowered as well as turned on a vertical and horizontal axis, so that it is easy to place it perpendicularly to the sun's rays, and at such a distance as to make the light strike the area of skin to be treated. To concentrate the electric arc light Finsen designed an apparatus consisting of lenses of quartz framed in two brass tubes which slide one into the other, like the two pieces of a telescope; lenses of quartz being used because this material in a far higher degree than glass allows the ultra-violet rays of shortest wave length to pass through and it is these ultra-violet rays that have active bactericidal effect.

Finsen's classic cases were lupus vulgaris; his results were most satisfactory as they were in lupus erythematosus, and his recent death is a severe loss of this branch of medicine.

Recently Kassabian introduced an old invention into skiagraphy; it being the idea of the stereoscope. The value of the

this method is as follows: In anatomy, in studying the structure of the osseous system, trabeculae, sinuses, grooves, projections, the exact relations of the articulating surfaces of the joints, blood vessels, bronchi, and other secretory and excretory canals; in surgery, in cases of fractures, the amount of deformity, the separation being as plainly visible as if the real skeleton were being observed. In dislocations the method would show the exact existing condition, as an ordinary skiagraph could not distinguish the backward dislocation from the forward one, because the shadows would be the same. In examination for foreign bodies the surgeon sees the foreign body by this method imbedded in the tissue in the relation to other organs. Kassabian advises that the method be employed in hospitals and in colleges in teaching anatomy and in private practice, for this purpose he uses a special table and an adjustable plate changer or holder which he had devised and by which he had overcome many difficulties. He has made X-ray negatives and prints by means of Wheatstone's reflecting stereoscope; also reduced prints and transparencies made from large negatives, by means of the Brewster's hand stereoscope.

This field is ripe for the gleaner and there is nothing discouraging in the outlook. It is impossible to prophesy what the next ten years hold in store.

Editorial

The laboratory, when under the supervision of a wise leader properly trained and alive to the importance of what a true laboratory should provide, becomes to the student a revelation and an inspiration. Here he sees, perhaps for the first time, how true knowledge is gained, how facts are acquired, and he learns to observe, to see for himself those mysteries which, when described even by the words of a master, appear vague and indefinite.

RUSSELL H. CHITTENDEN.

The New Laboratory of Physiological Chemistry. In the address of welcome to the Alumni on Commencement Day, Professor Gordinier recapitulated the advances in the college work, and made especial mention of (1) undivided attention by members of the teaching body, (2) clinical advantages, and (3) the impetus to work in all branches coincident with the establishment of the Bender laboratory. In conclu-

sion Professor Gordinier directed attention to "the one great growing need of our institution, a special laboratory building thoroughly well equipped and endowed, for the purposes of teaching experimental physiology and physiological chemistry.

In these few words is expressed a desire long entertained by the faculty of the College, and seldom is the fulfilment of a wish so soon realized. During the last session of the college a committee, consisting of Professors Tucker, Gordinier and Pearce, was appointed to consider this question, and upon their report, on June 14th the faculty decided to establish this department at once. The committee was authorized to equip Alumni Hall, a large well lighted room, for laboratory purposes, and to engage an instructor specially trained in this department to devote to it his entire time. It is intended that the course in physiological chemistry will be inaugurated during the coming term.

In the training of a physician the important purposes of instruction, are, first, education in diagnosis, and, second, the methods of preventing, alleviating or curing disease. It is obvious that the physician who attempts to relieve a morbid condition, without knowing what that condition is, labors under the disadvantage associated with all empirical effort. Physiological chemistry, at first of purely scientific interest, in that it dealt with the chemistry or metabolism of the normal body. has made such great advances as now to include the chemistry of the organism, in morbid states. As a natural result there has developed a branch of this knowledge which may be properly termed "pathological chemistry," which has given to us many methods of diagnosis not previously available. It is sufficient to mention the analyses of gastric and other secretions, and the determination of the more complex constituents of the urine. Recent developments in our understanding of diabetes, gout, leukemia and other constitutional diseases reveal the immediately practical value of this department of medicine.

It is therefore a matter of congratulation that the faculty has so wisely determined upon the prompt organization of this much needed department.

The college course will now include the preliminary training in the dissecting room and the various laboratories of chemistry, physiology, pharmacology, bacteriology and pathology, and the bedside work in the hospitals. Students are not

told what they should know, but ascertain for themselves under competent direction the phenomena of life as revealed in chemical reactions, by the microscopic and by the gross manifestations of disease. The objective method of instruction thus asserts itself over the long standing didactic lecture, a system by which learned professors have educated themselves at the expense of their hearers. Those who have grown up under this plan remember gratefully the strong personalities and erudition of their teachers; those developed under the Socratic method of to-day, carry into their practice a mind well stored with available facts, gained by patient observation and diligent application. We may look back regretfully upon the eloquence of the past, but the future is bright in promise.

Didactic lecture, *vale!*

Scientific Review

THE OCCURRENCE AND SIGNIFICANCE OF BASOPHILIC GRANULATIONS IN THE ERYTHROCYTES OF MAN AND ANIMALS.

Whatever ultimately may prove to be the true nature of the basophilic granules found within the erythrocytes in lead poisoning, pernicious anæmia and some other diseases, that any consideration of their origin is inseparably linked with the study of degeneration and regeneration of the blood, and especially with that upon the fate of the erythroblastic nucleus, is evident. For that reason a short resumé of the latter work at least, seems desirable.

Most authorities are agreed upon the fact that the adult red cell of the circulating blood has its origin from the nucleated hæmoglobin containing cells in the bone marrow, the normoblasts and megaloblasts, by a loss of their nuclei. The method by which these nuclei disappear is however a matter of dispute.

Many observers, especially Rindfleisch, Maximow, and Howell uphold the view that the nucleus is extruded en masse. The latter describes cells fixed in the very act of losing their nuclei in this way, though he also describes a cell of this nature which contained granules scattered diffusely through the cytoplasm; these granules he thought represented particles of the nuclear chromatin. Malessez, Fellner, and Duval consider that the adult erythroblast is itself merely an extruded portion of cyto-

plasm given off by the primitive nucleated marrow cell. Ehrlich believes that while the nucleus of the normoblast may be extruded bodily, yet the nucleus of the megaloblast first undergoes karyorhexis.

This leads us to the view first suggested as to the fate of the nucleus, the one upheld by the majority of the observers, and the one which the latest work tends to support, viz, that the nuclei of the erythroblasts disappear by karyorhexis or karyolysis within the red cells themselves. This view was first offered by Kölliker in 1846. He was able to find in the liver of embryos erythroblasts with well preserved nuclei, and other cells in all stages of nuclear transition between those mentioned and erythrocytes with only two or three small granules within the cell protoplasm. Israel and Pappenheim, more recently, have studied both fresh and stained blood of mouse embryos, and are able to find both normoblasts and megaloblasts with gradually fading nuclei evidently undergoing a process of karyolysis. In fresh blood they were unable to find free nuclei, and account for their presence in fixed and stained smears by some mechanical injury to the red cells which formerly contained them. The names of other observers which should be mentioned in this connection are Neuman, Foa, Löwit, Osler, Mondino, Sala, Schmidt and Spuler. Some more recent work, which will be spoken of more in detail later, is that of Jawein, Schmidt, Vaughan, and Sabrazes, Bourret and Leger, all of whom uphold the view of the intracellular disappearance of these nuclei.

The relation, if any, of these degenerated nuclei to the basophilic granules will also be spoken of. Granules within the erythrocytes have long been known to exist. Erb in 1865 examined the fresh blood of normal animals and found granules in the red cells which were well differentiated by treatment with dilute acid. He found these granular cells to be distinctly increased in number after severe hæmorrhage, and though present in scanty numbers in adult man, yet they were very frequent in the new born. These granules were of varying sizes, and Erb thought they represented the remains of the nuclei of leucocytes, and that the cells which contained them were transitional between leucocytes and erythrocytes. Israel and Pappenheim, Müller, Schwalbe and Solley and others have also noted granules, which stained well with neutral red, in the fresh

erythrocytes. Their interpretation of this appearance varies. Schwalbe was able to watch the separation of small particles from the nucleus of a pigeon's erythrocyte stained with neutral red, and thought it a wandering out of the nuclear chromatin, a process connected with coagulation.

Interest in this subject has been aroused within the past four or five years by the constant finding of granular erythrocytes in cases of lead poisoning, in pernicious anæmia, chlorosis, leukæmia, and occasionally in various secondary anæmias and septicæmias. Much discussion has arisen as to their origin and significance, and the result has been much important clinical and experimental work upon the subject.

It seems best to hastily review the clinical and experimental findings of these various observers, and to then discuss in some detail the theories offered in explanation of the occurrence and significance of these granules.

Grawitz first called attention to the occurrence in cases of lead poisoning of granules scattered through the protoplasm of the red cells, varying in size from mere pin point dots to small masses the size of eosinophilic granules, and in number from one or two to a number too large to count in the small area represented by a single erythrocyte. The cells in which these granules were found also varied in number. These granules were either round or slightly angular and occurred either distinctly separate one from the other or in small groups and masses. More recently several observers have pointed out their frequent arrangement in rows and in circles. These granules stain with practically all basic or nuclear stains, but best with methylene blue or methylene azure, the chromatin staining element in polychrome methylene blue. The findings of Grawitz were quickly confirmed by Hamel and Behrendt (who emphasized their frequency in this disease) Moritz, Simon, Stengel, White and Pepper and others, and more recently by Cadwalader. Though the number of the granules appears to bear some relation to the severity of the poisoning, yet they are found long before any other sign or symptom makes its appearance, and in some cases noted by Stengel, White and Pepper, the lead workers had been under the influence of the metal only four days. The granules have been produced experimentally in man and animals by various workers, and appear after very minute doses; thus Grawitz produced them in rabbits by the intraperitoneal injection

of .03 grams of lead acetate, and White and Pepper have noted them in some number in man within twenty-five hours after a dose of seven and one-half grains of the same drug; Simon has noted them seventy-two hours after a similar dose of six grains. Šabrazes, Bourret and Leger found them twelve to twenty-four hours after injection of animals with a lead salt. These granules are almost constantly found in lead poisoning, and though also found in other diseases do not thus occur with the same constancy or frequency.

Similar granules have been found in pernicious anæmia by Grawitz, Stengel, White and Pepper, Cadwalader, Vaughan and Cabot. The "ring bodies" found by the latter in the red blood cells of pernicious anæmia, leukæmia, lead poisoning, etc., are possibly of similar origin. Leukæmic blood containing similar granular reds has been noted by Stengel, White and Pepper, Grawitz and Cabot. Grawitz was unable to find any granules in cases of chlorosis unless intestinal symptoms were present, but Stengel, White and Pepper found them in eleven of eighteen cases examined. They have also been found in secondary anæmias due to various causes such as hæmorrhage, drug poisoning, cachexiæ (tuberculosis and cancer) and septic conditions, in splenic anæmia and Hodgkin's disease. They have been found with malaria, usually in the convalescent stage, by Grawitz, Plehn and recently by Schmidt, and in a very interesting and suggestive case of bothriocephalus infection studied by Jawein; this case will be spoken of more at length. They have been produced experimentally in various ways; by venesection, Kohn; by poisoning with atrophin, Strauss; with copper, Sabrazes, Bourret and Leger; with phenylhydrazin, Kaminer and Rohnstein, Schmidt; with pyrocin, Bloch, Strauss, Stengel, White and Pepper; with potassium chlorate and mercuric chloride, Stengel, White and Pepper; with toluylendiamin, Schwalbe and Solley; with extract of bothriocephalus, Schmauch.

The theories offered by the various writers as to the origin of these granules may be grouped under two headings, if we disregard the possibility of their being artefacts, which is not probable, as the fact that they are found in normal blood in very small numbers tends to support one theory in regard to their origin rather than to offer another explanation. The two theories offered are (1) that they are a degeneration product of the hæmo-

globin of the erythrocytes brought about by the action of some toxic substance, organic or inorganic, acting upon the blood or bone marrow; (2) that they are an evidence of regeneration; that they are the remains of the nuclei of the red blood cells. Among those in favor of the former theory may be mentioned Grawitz (in his later work), Stengel, White and Pepper, Bloch, Ehrlich, Moritz, Hamel, Simon, DaCosta and Guyot. As supporters of the latter theory, that the granules are nuclear remnants, may be mentioned, Askanazy, Lazarus, Engel, Strauss, Sabrazes, Bourret and Leger, Schmauch, Schmidt, Pappenheim, Jawein, Vaughan and Cadwalader.

The arguments of the first group of writers are mainly as follows: (1) that the granules occur in the blood of individuals the subjects of marked blood destruction or in those under the influence of the toxic action of some organic or inorganic substance; (2) that they do not occur in connection with any sign of blood regeneration; (3) that they may be produced experimentally by very small doses of toxic substances; (4) that there is no greater frequency of such granular cells in the bone marrow than in the circulating blood, a finding one would expect if they were part of a regenerative process; (5) that they may be found in nucleated erythrocytes possessing apparently intact nuclei, that erythroblasts with karyorhexic nuclei but no granules may be found, and that no transitional stages between typical granular erythrocytes and typical normal erythroblasts occur; (6) that they have not the staining properties of nuclear material.

The arguments on the other hand of those favoring their nuclear origin are exactly the reverse of those just stated and the observations offered in support of their theory directly refute those of the opposing side. Thus we have to choose between the two theories upon the basis of directly opposing observations, those, however, of the men favoring the nuclear origin are far in excess of those of the degeneration advocates.

That these granules are most frequently found (except in lead poisoning) in severe anæmias is true, whether the anæmia is of the primary type or secondary to the action of some blood destroying agent such as the bacterial toxins in cases of sepsis, the toxins excreted by animal parasites as *Bothriocephalus latus*, or hæmolytic agents as toluylendiamin; but is it reasonable to suppose that in such cases there is no effort on the part of the bone marrow to replace the cells thus destroyed; and the

more severe the destruction why not the more vigorous the regeneration. The authorities most urgent in their arguments in favor of the degenerative origin of these granules acknowledge that in general the more severe the anæmia or the toxic state the more frequent the granular cells, and the more abundant the granules in the individual cells; *i. e.*, the greater the need for blood regeneration, the more frequent are these granules seen. That some effort is made by nature to replace injured blood cells is manifest when we consider the frequency with which erythroblasts are found in the circulation in cases of anæmia of any severity. That the granular cells are more frequent in the circulating blood when it also shows erythroblasts is shown by the findings of Askanazy, Lazarus, Vaughan, Cadawalder and Schmidt. The latter writers noted them as being distinctly increased in numbers just after the nucleated red cells decreased, suggesting that the granules were formed by the dissolution of the nuclei. Schmidt's case was particularly interesting. His patient had a severe anæmia following hæmoglobinuria in association with malaria treated with quinine. When first seen, a stained specimen of the blood showed many nucleated and polychromatophilic red cells, but no granular cells. Seven days later the megaloblasts had suddenly disappeared and the normoblasts were much fewer in number; at this examination the granular cells were found to have suddenly greatly increased in numbers, and from this time the total red count began to rise. Improvement continued several days until there was another attack of hæmoglobinuria. The granular cells then disappeared and did not return till convalescence again began. Schmidt says: "The fact that the basophilic granulations are seen only during convalescence speaks against their being a form of degeneration, and in practically all cases of malaria the granules are found at this time." Guyot's case of paroxysmal hæmoglobinuria which on superficial examination apparently conflicts with the findings of Schmidt, is found on analysis to be hardly comparable. Schmidt also reports a case of severe traumatic peripheral hæmorrhage. Blood examination on day of injury showed no morphological abnormality, but six days later many polychromatophilic and granular erythrocytes were present. The hæmoglobin percentage had meanwhile risen from fifty to seventy-five per cent. These latter findings agree with Kohn's experimental cases, and disprove Grawitz's

theory that granular red cells occurring after hæmorrhage occur only when the hæmorrhage is into the stomach or intestines. He thought they were due to a toxic substance produced by digestion of the hæmoglobin.

In the series of cases of chlorosis reported by Stengel, White and Pepper, in which they found granular red cells, they do not state whether or not erythroblasts are present, but they mention the fact that the granules were most abundant in the case with the lowest percentage of hæmoglobin, *i. e.*, in the case with the most marked anæmia. It has been mentioned that the granules under discussion are most constantly and frequently present in cases of lead poisoning. Nucleated red cells have not heretofore been considered as common in this disease, but in his recent paper Cadwalader reports having found them in the blood of six of eleven lead workers examined, none of whom showed symptoms; and of sixteen cases of lead poisoning all showed normoblasts, three in very large numbers; these three also showed megaloblasts. White and Pepper report normoblasts as being frequent in the blood of dogs poisoned with lead.

Nor does it seem necessary that erythroblasts be found in the circulation in this or any anæmic condition to explain the presence of the granular cells on the theory that the granules are nuclear remnants. Under normal conditions the entire cycle of development of the red blood cells takes place within the bone marrow, and it is only in severe anæmias that very unripe cells (erythroblasts) are thrown out into the circulation. In moderate grades of anæmia or blood destruction when there is a call for new erythrocytes, is it not probable that the first cells thrown forth will be those most developed (adult red blood cells), following which will come those less advanced in the process of development (granular reds), and only as a last resort will very unripe cells (nucleated cells) make their appearance. As there is a constant demand throughout life for new cells, this hypothesis would explain the presence of a small percentage (.5 to 1.5 per cent.) of granular cells in normal blood as noted by Vaughan, Cadwalader, Schur and Löwy, Rossin and Bibergeil, Reitter, and Schmauch (in cats); and as even minute quantities of lead (to say nothing of the other drugs mentioned) probably have some destructive action upon the adult erythrocytes necessitating a new supply, it would also account for the very rapid appearance of an increased number of granular cells after even

the small doses noted above. This hypothesis would also account for the parallel increase in the number of granules and the severity of the intoxication.

There is much variance between the observations recorded as to whether the granular red cells are found in the bone marrow as well as in the circulating blood, and if so, whether in increased numbers in the former situation. It is argued by those in favor of the granules being an evidence of protoplasmic degeneration, that they are found only in the circulating blood where degenerative elements are most apt to be seen, and that in the regenerative blood centers they are absent. Thus Ehrlich found no granules in the cells of the bone marrow, though at the same time nucleated erythrocytes were very frequent in that location. Schur and Löwy found them in only one case in the bone marrow though almost constantly in anæmic blood. Grawitz studied the hæmatopoietic organs in cases of pernicious anæmia and in experimental cases, and concluded that the granules were formed outside the blood forming centers.

On the other hand Stengel, White and Pepper, Litten, Vaughan and others have found them in the marrow. The latter reports them as in about the same percentage as in the blood of newly born infants.

Vaughan's work upon embryonal blood is most suggestive and most conclusive as to the relation between these granules and erythroblastic nuclei. He had previously carefully studied the blood of normal adults and found that red cells containing granules were present in percentages varying from 0.5 to 1.8 per cent. (average of eight individuals, 1.03 per cent). These figures have recently been confirmed by Cadwalader who gives the limits of his observations as 0.4 and 1.6 per cent. Vaughan then examined the blood of infants varying in age from two to sixteen hours and found the average percentage of granular cells was 3.5 per cent.; one of these infants examined six days later showed only 0.9 per cent. The blood of a premature infant born alive at seven months showed seven per cent. of granular reds, which percentage had fallen to three after four days in the incubator. Normoblasts were present in the blood of one of these children, and atypical nucleated red cells in the others. Examination was also made of the blood of pig embryos at different stages of development. The results were as follows: The number of granular cells in an embryo whose

length was three and one-half inches was seventeen per cent; in the blood of an embryo two and one quarter inches long, the granules were present in twenty-four per cent. of all red cells. Of the erythrocytes of an embryo seven-eighths of an inch long fully one half were nucleated, and many of these showed granules in their protoplasm; of the non-nucleated cells practically all were of the granular variety. Pappenheim and Engel also found granular cells in embryonal blood.

Many of the writers who oppose the theory that these granules are of nuclear origin lay stress upon the fact that they are present in many cells whose nuclei are apparently intact, and absent in many whose nuclei are undergoing degeneration. This is undoubtedly true but can perhaps be explained, while in the face of so many observations to the contrary, their contention that no transitional stages between these two mentioned have been seen, is now quite untenable. Among those most emphatic in this matter are Grawitz, Moritz, and Stengel, White, and Pepper. On the other hand Litten, Jawein, Cadwalader, Vaughan and others claim to have found definite transitional forms. Sabrazes, Bourret and Leger noted them in embryonal blood. Litten's case was one of acute pernicious anaemia. Jawein's case was one of bothriocephalus anaemia. Vaughan noted such transitional cells in a case of pernicious anaemia, and was able to observe the nuclei breaking up into granules in the blood of pigeons and geese. Jawein describes the cells found after a "blood crisis" as follows (quoted from Stengel, *Prog. Med.*, June, 1902). "The nuclei of the new cells presented an eaten, unravelled irregular contour, often several pieces of the nuclei were seen in the cells lying isolated from the nucleus; again the nucleus looked like a network or 7-12 granular were seen in a circle as though the nucleus had been blown to dust. In other cells the granules were more numerous and finer, yet still retained the form of the nucleus; again they were strewn irregularly through the cell in all stages of transition from the finest to the coarsest granules." Jawein's conclusions are in part as follows: Basophilic granulations occur only in young cells, and are an evidence of regeneration. Both large and small granules arise from karyorhexis and signify an increased function of the bone marrow.

It is interesting to note that Jawein agrees with Schmidt and

others that erythrocytic polychromatophilia is of similar significance, and is due to a solution of the nuclear substance in the protoplasm of the red corpuscles.

The following are offered by those believing in their nuclear origin as explanations of the fact that granules are often found in cells the nuclei of which are apparently intact. (1) The granules may arise during nuclear division when the nuclear membrane is broken. (2) By this division two nuclei may arise, one remaining intact while the other breaks down to form the granules.* (3) Granules may be given off from the edge of the nucleus after which it grows again to its normal circumference. (4) With the less delicate staining methods used by some of the writers it may be impossible to make out the slightest and earliest nuclear changes; thus the nucleus may have actually advanced some way in the process of disintegration before it is manifest. The second and last of these explanations have apparently the most value, particularly if we are to regard the first granules seen as bits of the chromatin network. The last explanation is supported by the findings of Vaughan and Cadwalader that better results were obtained by staining specimens of fresh blood than in using fixed smears. Another point noted especially by Vaughan, but borne out by the findings of various writers, which tends to show the nuclear origin of these granules, is the fact that when but few are present in a nucleated cell they tend to immediately surround the nucleus, and further that in avian corpuscles with disintegrated nuclei, in infant's blood and in experimental lead anaemia (White and Pepper) the granules at first tend to be bunched in the centre of the cell in the location of the nucleus, and not till later become diffusely scattered about in the cytoplasm.

Some writers (Bloch, Simon, White and Pepper) have not been able to stain the granules with methylene green, which has always been regarded as a specific nuclear stain, and thus have argued that the granules are not of nuclear origin. Vaughan, too, apparently was unable to stain the granules with methylene green, but in his hands the nuclei themselves stained but indifferently, while Cadwalader had no difficulty in staining both nuclei and granules. Cadwalader

* Jawein reports having seen red blood cells with two nuclei; one of which was absolutely intact, the other breaking down.

also calls attention to the fact that Demel and Donati have shown that the blue and red granules in the blood cells are identical, and that Marzocchi has proven this fact by substituting one stain for the other in the same preparation. Calwalader has confirmed the latter's observations. This fact refutes the theory of some writers that these granules are merely artefacts because taking basic stains. Stengel speaks of the basic staining of the degeneration of Maragliano and Castellino, and he says, "In no case is there the distinct basic affinity of the degenerated parts of the cell that is seen in the granular degeneration under consideration, but this is a point of too little importance to disprove our view." (*A. J. M. Sci.*, 1903, vol. 23, p. 879).

I wish now to speak briefly of the possibility that these granules are artefacts. A brief consideration only of this point is necessary as all observers are agreed upon the fact that they are true granules. The reasons advanced are as follows: (1) They are found by all observers in blood specimens fixed and stained in various ways. (2) They are found in normal blood but in only a small percentage of cells; this percentage as determined by different observers is very constant (.5 to 1.5 per cent.). (3) They are found in large numbers in only certain pathological conditions where they are practically constant, and cannot be produced artificially unless these pathological states are experimentally produced (anaemias and intoxications). They cannot be reproduced *in vitro*, and injection experiments into ligated blood vessels are also devoid of positive results (Sabrazes, Bourret and Leger). (4) In fresh specimens they are not increased upon allowing the specimens to stand for some hours though meanwhile the well known endoglobular and other degenerations appear in considerable number. (5) They have certain definite staining reactions. (6) They are more resistant than are the red cells, as is determined by treating preparations of blood which contain them with dilute acetic acid and other reagents. (7) They can be demonstrated in the blood of animals by various methods of vital staining (Stengel, White and Pepper, Rossin and Bibergeil) and in that case have the same appearance as in the other methods of preparation.

CHARLES K. WINNE, JR.

March 4, 1905.

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Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, MAY, 1905.

Deaths.

	1901	1902	1903	1904	1905
Consumption	27	24	20	18	21
Typhoid Fever	2	2	0	2	0
Measles	2	1	0	0	4
Scarlet Fever	1	0	7	1	0
Whooping cough	2	0	2	1	0
Diphtheria and croup....	1	5	3	0	3
Grippe	2	0	7	1	0
Pneumonia	4	19	15	18	10
Broncho-pneumonia	3	2	3	3	1
Bright's disease	15	8	10	16	15
Apoplexy	9	8	9	2	8
Cancer	8	9	7	7	6
Accidents and violence....	14	13	5	13	11
Seventy years and over....	15	24	28	23	25
One year and under.....	14	20	10	13	8
Total deaths.....	139	166	151	144	146
Death rate	16.36	19.53	17.77	16.94	16.31
Death rate less non-resi- dents .....	.....	.....	.....	16.00	15.04

Deaths in Institutions.

	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.
	1902		1903		1904		1905	
Albany Hospital	8	6	6	2	6	8	11	5
Albany Orphan Asylum.....	1	0	2	0	1	0	1	2
Child's Hospital	0	0	0	0	1	0	2	0
County House	3	0	3	0	5	0	4	0
Home for Aged Men.....	0	0	2	0	1	0	0	0
Dominican Convent	0	0	0	0	0	0	0	0
Friendless Home	0	0	1	0	0	0	3	1
Homeopathic Hospital	2	0	1	2	0	0	0	0
Hospital for Incurables	0	1	0	0	0	0	1	0
House of Shelter.....	0	0	0	0	0	0	0	0
Little Sisters of the Poor.....	0	1	0	1	1	0	0	0
Penitentiary	0	0	0	0	0	0	2	0
Public Places	0	0	0	0	6	0	0	0
St. Margaret's House	0	0	1	0	2	0	1	2
St. Peter's Hospital.....	0	0	0	0	2	0	5	2
Sacred Heart Convent.....	1	0	0	0	0	0	0	0
St. Frances De Sayles Orphan Asylum	1	1	0	0	0	0	1	0
St. Vincent's Female Orphan Asylum	1	0	0	0	0	0	0	0
St. Vincent's Male Orphan Asylum	1	0	0	0	0	0	0	0
St. Peter's Hospital.....	4	0	0	0	0	0	0	0
Births at term							81	
Marriages							28	
Still births							7	
Premature births							6	
Total							122	

PLUMBING INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation, there were three hundred and sixty-five inspections made, of which two hundred and nineteen were of old buildings and one hundred and thirty-six of new buildings. Fifty-one iron drains inspected, thirty connections with street sewers, thirty-three tile drains, seven urinals, sixty-two cesspools, one hundred and twenty-three wash basins, one hundred and seventeen sinks, ninety-eight bath tubs, seventy-nine wash trays, one butler's pantry sink, ten trap hoppers in yard, one hundred and ninety-five tank closets. One hundred and fifty permits issued for plumbing purposes and seventy-two for building purposes. Thirty-five plans were submitted to which twelve were of old buildings and twenty-three were for new buildings. Fifteen houses tested on complaint, seven with peppermint and eight with blue, red and there were fifteen water tests made. Thirty houses were examined on complaint and

seventy-five reinspections were made and twenty-one complaints were found valid and twelve were found to have been made without cause. There was one violation.

In the Bureau of Nuisances there were fifty-three complaints made of which five were privies, seven closets, two of drains, six of plumbing, two of sewer water, four of filthy yards, three of filthy alleys, four of filthy vacant lots, five of filthy premises, eight of water, four of sewer gas, one of manure, one of chickens, one of dogs, one of geese, two of odors, one of ventilation, and one unclassified. There were fifty inspections and fifty-four reinspections made and thirty-five notices served.

There were thirty mercantile certificates issued to children and thirty-five factory certificates issued to children.

BUREAU OF CONTAGIOUS DISEASES.

<i>Cases reported.</i>	1901.	1902.	1903.	1904.	1905.
Typhoid fever	2	7	2	1	1
Scarlet fever	8	10	13	15	8
Diphtheria and croup	32	22	23	1	8
Chickenpox.....	6	22	19	3	2
Measles	61	29	168	21	129
Whooping cough	2	2	1	0	0
Consumption	4	1	2	4	0
Total	115	93	228	45	140

CONTAGIOUS DISEASES IN RELATION TO SCHOOLS.

	Reported.		Deaths.	
	D.	S. F.	D.	S. F.
Public school No. 2.....		2		
Public school No. 6.....	1			
High school.....		1		
St. Agnes' school.....		1		
Number of days quarantine for diphtheria:				
Longest.....30	Shortest.....11	Average.....14 $\frac{3}{4}$		
Number of days quarantine for scarlet fever:				
Longest.....49	Shortest.....30	Average.....36		
Fumigations: Houses.....16	Rooms.....26			

ANTITOXIN.

Cases of diphtheria reported.....	8
Cases of diphtheria in which antitoxin was used.....	8
Cases in which antitoxin was not used.....	0
Deaths after use of antitoxin.....	2

Society Proceedings

ROSTER OF THE OFFICERS OF THE MEDICAL SOCIETY OF THE COUNTY OF ALBANY
DURING THE FIRST CENTURY OF ITS EXISTENCE.

*Prepared by HENRY L. K. SHAW, M. D., of the Committee on the Celebration of the
Centenary of the Society.*

YEAR.	PRESIDENT.	VICE PRESIDENT.	SECRETARY.	TREASURER.
1806	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	John G. Knauff
1807	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	John G. Knauff
1808	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	John G. Knauff
1809	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	John G. Knauff
1810	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	Peter Wendell
1811	Hunloke Woodruff....	Wm. McClelland.....	Charles D. Townsend.	Peter Wendell
1812	Wm. McClelland.....	Charles D. Townsend..	J. L. VanDusen.....	Peter Wendell
1813	Jonathan Eights.....	Isaac Hyde.....	T. Romeyn Beck.....	Peter Wendell
1814	Jonathan Eights.....	Erastus Williams.....	T. Romeyn Beck.....	Peter Wendell
1815	Jonathan Eights.....	Erastus Williams.....	T. Romeyn Beck.....	Peter Wendell
1816	Jonathan Eights.....	John Stearns.....	Peter Wendell.....	Joel A. Wing
1817	John Stearns.....	James Low.....	Peter Wendell.....	Joel A. Wing
1818	John Stearns.....	James Low.....	Peter Wendell.....	Joel A. Wing
1819	John Stearns.....	James Low.....	Peter Wendell.....	Joel A. Wing
1820	James Law.....	William Boy.....	Peter Wendell.....	Joel A. Wing
1821	Jonathan Eights.....	William Boy.....	Peter Wendell.....	Joel A. Wing
1822	C. C. Yates.....	William Boy.....	Wm. Humphrey.....	Joel A. Wing
1823	William Boy.....	Jonathan Eights.....	Wm. Humphrey.....	Joel A. Wing
1824	William Boy.....	Jonathan Eights.....	Wm. Humphrey.....	Barent P. Staats
1825	William Boy.....	Jonathan Eights.....	Wm. Humphrey.....	Peter Van O'Linda
1826	Joel A. Wing.....	Peter Williams.....	Wm. Humphrey.....	John W. Hinkley
1827	Joel A. Wing.....	Peter Williams.....	Peter Van O'Linda..	John W. Hinkley
1828	Platt Williams.....	Charles D. Townsend..	James P. Boyd.....	Roger Viets
1829	Platt Williams.....	Barent P. Staats.....	James P. Boyd.....	Edward A. Leonard
1830	Charles D. Townsend..	Barent P. Staats.....	Luke Wellington.....	Isaac Hempstead
1831	Charles D. Townsend..	Barent P. Staats.....	Luke Wellington.....	Isaac Hempstead
1832	Alden March.....	Guy Spalding.....	Elisha S. Burton.....	Carroll Humphrey
1833	Alden March.....	Guy Spalding.....	Elisha S. Burton.....	Carroll Humphrey
1834	Barent P. Staats.....	B. B. Fredenburgh..	Herman Wendell.....	Jarvis Barney
1835	Barent P. Staats.....	Peter B. Noxon.....	Herman Wendell.....	Jarvis Barney
1836	Barent P. Staats.....	A. W. Rockwell.....	Herman Wendell.....	Jarvis Barney
1837	John W. Boy.....	L. C. Warren.....	Abraham Groesbeck..	John F. Townsend
1838	James P. Boyd.....	Peter McNaughton..	Abraham Groesbeck..	Henry Green
1839	James P. Boyd.....	Peter McNaughton..	Abraham Groesbeck..	Henry Van O'Linda
1840	Jonathan Eights.....	Peter McNaughton..	Peter Van Buren.....	Henry Van O'Linda
1841	Peter Van Buren.....	John S. Van Alstyne..	Henry Green.....	Henry Van O'Linda
1842	Peter Van Buren.....	John S. Van Alstyne..	Henry Green.....	Henry Van O'Linda
1843	Peter Van Buren.....	John S. Van Alstyne..	Jonathan Case.....	E. B. O'Callighan
1844	Thomas Hun.....	Henry Van O'Linda..	John Campbell.....	E. B. O'Callighan
1845	Thomas Hun.....	Mason F. Cogswell..	John Campbell.....	E. B. O'Callighan
1846	Mason F. Cogswell..	R. H. Thompson.....	John Campbell.....	E. B. O'Callighan
1847	Mason F. Cogswell..	R. H. Thompson.....	J. V. P. Quackenbush	C. C. Waller
1848	James McNaughton..	John Swinburne.....	Benj. H. Sheldon.....	C. C. Waller
1849	James McNaughton..	John Swinburne.....	Benj. H. Sheldon.....	J. B. Rossman
1850	James H. Armsby.....	William F. Carter.....	Benj. H. Sheldon.....	J. B. Rossman
1851	James H. Armsby.....	William F. Carter.....	Benj. H. Sheldon.....	J. B. Rossman
1852	J. V. P. Quackenbush.	U. G. Bigelow.....	Sylvester D. Willard..	C. C. Waller
1853	J. V. P. Quackenbush.	U. G. Bigelow.....	Sylvester D. Willard..	C. C. Waller
1854	U. G. Bigelow.....	Samuel H. Freeman..	Sylvester D. Willard..	C. C. Waller
1855	U. G. Bigelow.....	Samuel H. Freeman..	Sylvester D. Willard..	C. C. Waller
1856	Samuel H. Freeman..	Sylvester D. Willard..	Levi Moore.....	Wm. H. Bailey
1857	Samuel H. Freeman..	Sylvester D. Willard..	Levi Moore.....	Wm. H. Bailey
1858	Sylvester D. Willard..	S. O. Vanderpoel.....	Levi Moore.....	Wm. H. Bailey
1859	Wm. F. Carter.....	S. O. Vanderpoel.....	Levi Moore.....	Wm. H. Bailey
1860	S. O. Vanderpoel.....	Leonard G. Warren..	Oscar H. Young.....	Henry H. Newcomb
1861	S. O. Vanderpoel.....	Leonard G. Warren..	Oscar H. Young.....	Henry H. Newcomb
1862	Howard Townsend..	Joseph Lewi.....	Oscar H. Young.....	Henry March
1863	Peter McNaughton..	Levi Moore.....	J. R. Boulware.....	Henry March
1864	Peter P. Staats.....	Frank G. Mosher.....	J. R. Boulware.....	H. R. Haskins
1865	Levi Moore.....	R. H. Sabin.....	Martin L. Mead.....	F. L. R. Chapin
1866	James E. Pomfret.....	R. H. Sabin.....	Martin L. Mead.....	Thomas Beckett
1867	R. H. Sabin.....	James L. Babcock.....	George T. Stevens.....	Thomas Beckett
1868	James L. Babcock.....	J. W. Moore.....	Charles H. Porter.....	Andrew Wilson
1869	Charles H. Craig.....	C. D. Mosher.....	Charles H. Porter.....	Andrew Wilson

**ROSTER OF THE OFFICERS OF THE MEDICAL SOCIETY OF THE COUNTY OF ALBANY
DURING THE FIRST CENTURY OF ITS EXISTENCE.—(Continued)**

YEAR.	PRESIDENT.	VICE PRESIDENT.	SECRETARY.	TREASURER.
1870	William H. Bailey.....	Andrew Wilson.....	Charles H. Porter....	D. V. O'Leary
1871	Joseph Lewi.....	Amos Flower.....	John M. Bigelow....	D. V. O'Leary
1872	Albert VanderVeer....	A. Shiland.....	Frederic C. Curtis....	William H. Murray
1873	J. Swinburne.....	W. H. Stienburgh....	Frederic C. Curtis....	W. H. T. Reynolds
1874	James S. Bailey.....	E. C. Witbeck.....	Joseph H. Blatner....	W. H. T. Reynolds
1875	Henry March.....	J. D. Featherstonhaugh	Lewis Balch.....	D. H. Cook
1876	Joseph N. Northrup....	William H. Murray....	B. U. Steenburg.....	A. T. VanVranken
1877	Charles A. Robertson....	Louis Boudrias.....	Eugene VanSlyke....	H. E. Mereness
1878	Frederic C. Curtis.....	A. T. VanVranken....	T. Kirk Perry.....	H. E. Mereness
1879	John M. Bigelow.....	B. U. Steenburg.....	Lorenzo Hale.....	G. L. Ullman
1880	A. Shiland.....	William Hailes.....	Lorenzo Hale.....	G. L. Ullman
1881	Jacob S. Mosher.....	John V. Haynes.....	T. Featherstonhaugh.	M. J. Lewi
1882	Norman T. Snow.....	D. C. Case.....	M. J. Lewi.....	M. J. Lewi
1883	Herman Bendell.....	J. Archambault.....	E. A. Bartlett.....	M. J. Lewi
1884	J. D. Featherstonhaugh	T. Kirk Perry.....	J. B. Stonehouse....	Uriah B. La Moure
1885	B. U. Steenburg.....	O. D. Ball.....	W. J. Nellis.....	Uriah B. La Moure
1886	Lorenzo Hale.....	S. R. Morrow.....	D. Fleischman.....	S. A. Russell
1887	Franklin Townsend, Jr.	J. H. Mitchell.....	T. F. C. Van Allen....	S. A. Russell
1888	D. H. Cook.....	D. W. Houston.....	W. O. Stillman.....	J. V. Hennessy
1889	U. B. La Moure.....	D. Fleischman.....	W. G. Macdonald....	J. V. Hennessy
1890	M. J. Lewi.....	J. D. Craig.....	Robert Babcock.....	J. V. Hennessy
1891	Henry Hun.....	T. F. C. Van Allen....	G. E. Lochner.....	J. V. Hennessy
1892	E. A. Bartlett.....	W. B. Sabin.....	T. E. Carroll.....	J. V. Hennessy
1893	D. V. O'Leary.....	H. VanRensselaer....	J. W. Droogan.....	J. V. Hennessy
1894	O. D. Ball.....	Robert Babcock.....	J. W. Droogan.....	William H. Happel
1895	A. T. VanVranken.....	J. F. Barker.....	Lansing B. Winne....	William H. Happel
			A. MacFarlane.....	
1896	J. D. Craig.....	L. B. Winne.....	Charles H. Moore....	William H. Happel
1897	J. V. Hennessy.....	T. L. Carroll.....	J. W. Wiltse.....	William H. Happel
1898	J. Archambault.....	G. L. Ullman.....	L. H. Neuman.....	William H. Happel
1899	T. F. C. Van Allen....	J. W. Wiltse.....	H. S. Pease.....	W. H. George
			George Blumer.....	
1900	William Hailes.....	Martin MacHarg.....	George Blumer.....	W. H. George
1901	W. H. Murray.....	Andrew MacFarlane...	H. S. Pease.....	W. H. George
			H. L. K. Shaw.....	
1902	Samuel B. Ward.....	James P. Boyd.....	A. W. Elting.....	W. H. George
1903	Cyrus S. Merrill.....	J. Archibald.....	H. L. K. Shaw.....	W. H. George
1904	James P. Boyd.....	J. M. Mosher.....	J. F. Rooney.....	W. H. George
1905	James W. Wiltse.....	J. F. McGarrahan....	J. F. Rooney.....	W. H. George

**ROSTER OF MEMBERS OF THE MEDICAL SOCIETY OF THE COUNTY OF ALBANY
ADMITTED FROM 1881 TO 1905.**

*Prepared by HENRY L. K. SHAW, M. D., of the Committee on the Celebration of the
Centenary of the Society.*

1881	George S. Munson....	Albany.	W. W. Scofield.....	Removed.
	John F. Lockwood....	Removed.	C. M. Culver.....	Albany.
	S. Edward Ullman....	Removed.	J. W. Mann.....	Died.
	T. W. Nellis.....	Died.	1884	J. H. Mitchell.....
	W. J. Nellis.....	Albany.		Cohoes.
	F. L. Classen.....	Albany.		Removed.
	Howard Miller.....	Removed.		Removed.
	Howard S. Paine.....	Removed.		Died.
	Laurentine Rouchel...	Removed.		Albany.
	Thomas G. Hyland....	Removed.		Bethlehem.
	Carrol H. Phillips....	Died.		Removed.
	C. W. Green.....	Removed.		Removed.
	Charles F. Huddleston.	Remo d.	1885	Celwyn A. Russell....
1882	W. B. Sabin.....	Watervliet.		Removed.
	Samuel Peters.....	Watervliet.		Died.
	F. S. Peters.....	Died.		Albany.
	Henry Hun.....	Albany.		Albany.
	George E. Lyon.....	Removed.		Cohoes.
	W. H. Fowler.....	Died.		Cohoes.
	David Fleischman....	Died.		Removed.
1883	W. L. Schutter.....	Albany.	1886	Orson Britton.....
	F. H. Fisk.....	Albany.		Removed.
	Charles K. Crawford..	Removed.		Albany.
	J. W. Riley.....	Removed.		Died.
				Albany.
				Albany.
				South Westerlo.
				Removed.

ROSTER OF MEMBERS OF THE MEDICAL SOCIETY OF THE COUNTY OF ALBANY ADMITTED FROM 1881 TO 1905.—(Continued)

1887	Julius B. Southworth..	Removed.	T. W. Jenkins.....	Albany.
	J. V. Sheppey.....	Albany.	M. S. Leavy.....	Albany.
	James P. Marsh.....	Green Island.	E. N. K. Mears.....	Albany.
	Robert Babcock.....	Albany.	H. S. Pearse.....	Removed.
1888	Arthur S. Capron.....	Albany.	Ralph Sheldon.....	Albany.
	Thomas H. Willard...	Removed.	R. H. Tedford, Jr...	Albany.
	E. E. Larkin.....	Removed.	1897 W. A. Alexander....	Albany.
	T. L. Carroll.....	Albany.	W. S. Bristol.....	Albany.
	Charles H. Moore.....	Albany.	P. J. Fagen.....	Removed.
	R. J. Smith.....	Removed.	F. H. Hurst.....	Removed.
	W. G. Macdonald.....	Albany.	T. W. Jenkins.....	Albany.
	G. R. De Silva.....	Preston Hollow.	J. M. Mosher.....	Albany.
1889	G. G. Lempe.....	Albany.	C. L. Myers.....	Albany.
	N. L. Eastman.....	Died.	A. Sautter.....	Albany.
	H. VanRensselaer...	Albany.	J. C. Shiland.....	Watervliet.
	Adam Blessing.....	Albany.	W. J. Wansboro.....	Albany.
1890	H. C. Abrams.....	Newtonville.	1898 C. H. Richardson....	Removed.
	Thomas Helme.....	McKownville.	H. J. Lipes.....	Albany.
	G. Emory Lochner....	Albany.	George Blumer.....	Removed.
	R. F. McFarlane.....	Removed.	A. J. Lartigau.....	Removed.
	Wm. MacNaughton...	Watervliet.	A. L. George.....	Albany.
	George T. Moston.....	Albany.	W. E. Swan.....	Removed.
	A. T. Powell.....	Coeymans.	S. L. Dawes.....	Albany.
	J. E. Smith.....	Albany.	J. C. Dannais.....	Cohoes.
1891	James E. Brennan....	Died.	E. M. Bell.....	Cohoes.
	E. V. Colbert.....	Albany.	John Archibold.....	Cohoes.
	W. H. Happel.....	Albany.	F. Sauerbrie.....	Died.
	Louis LeBrun.....	Albany.	M. Reid.....	Coeymans.
	Arthur G. Root.....	Albany.	1900 H. L. K. Shaw.....	Albany.
	J. H. Timmers.....	Died.	A. W. Elting.....	Albany.
	J. B. Washburne.....	Delmar.	E. A. VanderVeer...	Albany.
	G. A. Williams.....	Removed.	A. H. Traver.....	Albany.
1892	J. C. Browne.....	Albany.	H. E. Lomax.....	Albany.
	R. H. Heenan.....	Albany.	1901 F. M. Guyer.....	Albany.
	W. H. Conley.....	Removed.	E. E. Hinman.....	Albany.
	L. H. Neuman.....	Albany.	J. A. Lanahan.....	Albany.
1893	C. E. Davis.....	Albany.	G. L. Streeter.....	Removed.
	A. MacFarlane.....	Albany.	B. J. Troidle.....	Albany.
	C. C. McCulloch.....	Albany.	F. Crounse.....	Altamont.
	T. A. Ryan.....	Albany.	1902 Anne T. Bingham...	Removed.
	J. W. Droogan.....	Removed.	E. Sweet.....	Removed.
	W. I. Goewey.....	Albany.	Mary F. Sweet.....	Removed.
	J. W. Wiltse.....	Albany.	H. D. Pease.....	Albany.
	John S. Guinan.....	Removed.	A. T. Laird.....	Albany.
1894	F. M. Joslin.....	Removed.	H. W. Carey.....	Troy.
	M. D. Stevenson.....	Albany.	J. F. Rooney.....	Albany.
	W. B. Rossman.....	Albany.	1903 LaSalle Archambault.	Albany.
	W. J. Kernan.....	Died.	Harris Moak.....	Removed.
	W. F. Robinson.....	Removed.	John Griffin.....	Removed.
1895	W. S. Hale.....	Albany.	L. F. Adt.....	Albany.
	S. LeFevre.....	Removed.	E. G. Griffin.....	Albany.
	J. M. Moore.....	Albany.	C. G. Hacker.....	Albany.
	J. W. Swett.....	Died.	P. J. O'Brien.....	Albany.
	C. F. Theisen.....	Albany.	R. M. Pearce.....	Albany.
1896	W. H. George.....	Albany.		

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK POOR.—Number of new cases 99, classified as follows: Dispensary patients receiving home care, 5; district cases reported by health physicians, 6; charity cases reported by other physicians, 38; patients of limited means, 43; old cases still under treatment, 43; total number of patients under nursing care during the month, 135. *Classification of diseases, (new cases)*—Medical, 17; surgical, 13; gynaecological, 3; obstetrical, 25 mothers and 25 infants under professional care; dental, 5; eye and ear, 3; throat and nose, 1; removed to hospitals, 1; deaths, 6.

Special Obstetrical Department: Number of obstetricians in charge of cases, 2; attending obstetricians, 1; medical students in attendance, 7; Guild nurses, 7; cases, 6; number of visits of head obstetrician, 28; by attending obstetricians, 7; by the medical students, 24; by the Guild nurses, 56; total number of visits for this department, 113.

Visits of Guild nurses (all departments): Number of visits with nursing treatment, 950; for the professional supervision of convalescents, 212; total number of visits, 1,162. Five graduate nurses and five assistant nurses were on duty. Cases were reported to the Guild by three of the health physicians and by thirty-three other physicians and by three dentists.

ALBANY HOSPITAL TRAINING SCHOOL FOR NURSES.—The graduating exercises of the class of 1905 of the Training School for Nurses were held at the Academy Hall, Wednesday evening, May 17th. A reception was held from five to six o'clock at the Nurses' Home, Albany Hospital.

CENTENNIAL OF THE ALBANY COUNTY MEDICAL SOCIETY.—This being the 100th year of the existence of the Medical Society of the County of Albany, the president, Dr. James P. Boyd, commemorated the event by a dinner which he gave to the members of the society at the Fort Orange Club on Tuesday evening, May 9, 1905. A most enjoyable evening was spent by the members of the society and the event will be one long remembered as characteristic of the courtesy of Dr. Boyd.

YOUNG WOMEN'S SUMMER CAMP.—For the eighth season a camp designed for young business women and self-supporting girls has opened at Altamont, N. Y., in the heart of the Helderberg mountains. The camp has been arranged by some of our prominent religious workers and everything possible is done to make the vacation spent there healthful and enjoyable at a minimum cost. A charge of \$2.75 per week will be made to the girls. This income, however, does not support the camp. In view of the amount necessary for this Summer's work and also in anticipation of the need of a building fund the co-operation of all who are interested in the young women of our country is asked. Information may be obtained from Miss Lucy E. Jones, 32 Elk street, Albany, N. Y.

ASSOCIATION OF MEDICAL LIBRARIANS.—The eighth annual meeting of the Association of Medical Librarians was held June 10, 1905, at the Boston Medical Library, Boston, Mass. After the usual routine of business a scientific program was taken up and valuable papers were presented, covering subjects of interest to medical librarians. In the evening the annual dinner was held. Among the officers elected for the ensuing term appears the name of Dr. Albert Vander Veer of Albany, who was elected a member of the finance committee.

EXAMINATIONS FOR HOSPITAL INTERNES.—The United States Civil Service Commission announces an examination on July 12 and 13, 1905, to secure eligibles from which to fill vacancies in the position of Hospital Interne on the Isthmus of Panama. The age limit is from 20 to 30 years, salary \$50 per month with board and quarters for the first year, after which the salary will be \$125 a month. Persons desiring to take the examination must apply at once to the United States Civil Service Commission, Washington, D. C., or to the Board of Examiners at the capital city of any State in the Union.

MEDICAL LEGISLATION IN ILLINOIS.—The report of the Secretary of the State Board of Health of Illinois, published May 8th, 1905, shows that three osteopathic bills, one antivivisection bill, and one optometry bill failed to pass the legislature of that State in its last session. This shows the standing which this State takes in anything but sound medical legislation. A number of bills were passed by the General Assembly among which was one to provide for the treatment of poor persons afflicted with rabies, one for the free distribution of antitoxin, one for the establishment of a State Board of Examiners of registered nurses, together with an appropriation of \$25,000 to provide for the erection of a State Sanitarium for persons afflicted with tuberculosis.

A NEW EDITION OF GRAY'S ANATOMY.—Lea Bros. & Company announce a new edition of Gray's Anatomy, to be published about midsummer, and embodying nearly two years of labor on the part of the editor, J. Chalmers DaCosta, of Philadelphia, and a score of special assistants. The work has been generally revised and contains many new and valuable illustrations.

COLLEGE OF PHYSICIANS AND SURGEONS, SAN FRANCISCO.—We are in receipt of the commencement announcement of the College of Physicians and Surgeons of San Francisco. The commencement exercises of the medical, dental and pharmaceutical departments were held at the Alhambra Theatre, May 18, 1905.

PERSONAL.—Dr. Alvah H. Traver, (A. M. C. '98), is taking a post-graduate course at the Medical Department of Harvard University. He will resume his practice about July 1st.

—Dr. E. L. JOHNSON, (A. M. C. '91), is at present recuperating for a year at San Jose, Cal. He has been in practice at Pomona, Cal., but does not expect to return there.

—DR. RUSSELL G. ANDREW, (A. M. C. '66), of Navesink, N. J., who has recently been very ill, is reported improved.

—DR. GEORGE V. WARNER, (A. M. C. '02), special representative of the Denver Chemical Manufacturing Company, sailed for Europe on the 21st of May in the interest of his firm.

MARRIED.—WARNER-SWAN.—At ATLANTIC HIGHLANDS, N. J., April 11, 1904, DR. GEORGE V. WARNER, (A. M. C. '02), and Miss EMMA CATHERINE Swan.

—SWART-QUICK.—At ROTTERDAM, N. Y., Wednesday, May 17, 1905, DR. WILLIAM J. SWART, (A. M. C. '98), and Miss JENNIE M. QUICK. After a short wedding tour Dr. and Mrs. Swart will leave for Nakawn, Sri Romarat, Siam, where the doctor is engaged as a medical missionary.

—HASKELL-GROESBECK.—At ALBANY, N. Y., June 7, 1905, DR. CLAYTON K. HASKELL, (A. M. C. '01), and Miss BERTHA W. GROESBECK. Dr. Haskell is surgeon at the Soldiers' and Sailors' Home at Bath, N. Y., where he and his wife will continue to reside.

DEATHS.—DR. WILLIAM N. BONESTEEL, A. M. C. '63, died at his home, Troy, N. Y., March 20, 1905.

—DR. CHARLES E. GREENMAN, (A. M. C. '89), died at his home, Troy, N. Y., April 25, 1905.

—DR. IRA P. SMITH, (A. M. C. '59), died at Bath, N. Y., May 26, 1905, aged 69.

—DR. JOHN SMITHWICK, (A. M. C. '69), died at Sharon, Mass., May 21, 1905, aged 66.

—DR. GEORGE P. JOHNSON, (A. M. C. '67), died at his home, Mexico N. Y., July 17, 1904.

—DR. NATHAN F. SWEATMAN, (A. M. C. '72), died at his home, Amsterdam, N. Y., February 18, 1905.

—DR. JARED BASSETT, (A. M. C. '39), died at Evanston, Ill., May 10, 1905, of pneumonia, aged 91 years.

—DR. A. PARKER MUIR, (A. M. C. '96), died at New York, June 2, 1905.

—DR. LORENZO TRAVER, (A. M. C. '57), died at Providence, R. I., October 24, 1903, aged 69.

—DR. HENRY W. GILES, (A. M. C. '74), died at Albany, N. Y., June 5, 1905.

IN MEMORIAM**DR. JARED BASSETT.**

It is with a great deal of regret that announcement is made to the Alumni of our college of the death of Dr. Jared Bassett. Dr. Bassett received the first diploma ever issued by the college, graduating with the class of 1839. After graduation he entered upon his practice at Evanston, Ill., where he has remained until the time of his death, which occurred May 10, 1905, which was caused by acute pneumonia. Dr. Bassett retired from active practice a number of years ago, but retained an active interest in medical matters and the welfare of his Alma Mater to the last. Almost his last act was to write a word of greeting to the Alumni Association in session, which was read at the last meeting.

DR. HENRY W. GILES.

Dr. Henry W. Giles, who was for many years prominent in the musical circles of Albany, N. Y., died at his home, June 5, 1905, after a long illness. He was born at Cherry Valley, N. Y., and at a very early age showed musical talent, playing a church organ when but fourteen years of age. His musical education was received in Berlin, London and Paris. Before going abroad to pursue his medical studies he attended the Albany Medical College, from which institution he graduated in 1874. Upon his return to Albany he at once took rank among the first of local musicians, and until the time of his death was actively interested in his chosen work. Dr. Giles never practiced medicine. He was prominent in Masonic circles and was an active member of several city and State musical associations. Dr. Giles leaves a widow and three children.

DR. LORENZO TRAVER.

Dr. Lorenzo Traver was born October 7, 1834, at Nassau, N. Y. He was educated in the common schools of this State and commenced the study of medicine in 1854 at Glens Falls, N. Y., under Drs. James Ferguson and John D. Burnson. He graduated from the Albany Medical College with the class of '57, commencing the practice immediately at New Bedford, Mass., where he remained until November 22, 1861, when he entered the United States Navy as acting assistant surgeon. His service lasted until October, 1868, when his resignation was accepted. During that time he saw service on many vessels and in various parts of our country. After retiring from naval service he located at Providence, R. I., where he practiced until the time of his death. He was prominent in fraternal circles and died leaving a wife and three children.

DR. A. PARKER MUIR.

The funeral of Dr. A. Parker Muir, of the class of 1896, took place Sunday, June 4, 1905, at the Albany Rural Cemetery. Rising under the most adverse circumstances to a promising position in his profession,

Dr. Muir was a truly self-made man. His early life was spent in Albany and he was educated in the public schools, but did not receive even the benefit of a high school education. Immediately upon his graduation from the Albany Medical College, he was appointed to a position on the medical staff of the Manhattan State Hospital, where he served for a number of years. He then took up the practice of his profession in New York city, where he was rapidly making an enviable record. He was an officer of the New York City Alumni Association and will be greatly missed by his associates.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Postmortem Pathology. By HENRY W. CATTELL, M. D. Second Edition, 551 pages, 183 figures, 6 plates, bibliography. Published by J. B. Lippincott & Co., Philadelphia, 105.

This book is intended to serve as a reference book for those physicians who have not had the benefit of a thorough practical training in autopsy technic and diagnosis, but who are more or less frequently called upon to perform autopsies. The technic of the various steps of an autopsy is described in full and with the aid of a large number of well selected illustrations and a brief account is given of the pathological conditions liable to be encountered in the various organs. By far the most useful feature of the book is the part devoted to the autopsy technic which is taken up under the following heads: Order of Examination and Post-mortem Records; Post-mortem Instruments and How to Use Them; Examination of the Exterior of the Body; Technic of Opening the Abdominal Cavity and the Topographic Examination of the Parts Contained therein; Technic of Exposing the Thoracic Cavity and the Critical Examination of the Parts Contained therein; Critical Examination of the Organs of the Abdominal Cavity; Diseases of the Genito-Urinary Tract; Examination of the Skull and Brain; Examination of the Spinal Canal and Cord; Examination of the Nasopharynx, Eyes, and Ears; Examination and Diseases of the Bones and Joints; Post-mortem Examination of the New-born; Restricted Post-mortem Examinations; Restoration and Preservation of the Body; The Preservation of Tissues for Macroscopic and Microscopic Purposes; Bacteriologic Investigations; Comparative Post-mortems.

These chapters are all well written and excellently illustrated with the exception of the chapter on the preservation of tissues for macroscopic and microscopic purposes. This chapter is unnecessarily long and too much space is taken up with the description of little used fixing and staining methods so that the subject appears unnecessarily complicated.

The lesions likely to be encountered are discussed under the following headings: Diseases of the Heart, Blood, Blood-vessels and Lymph-vessels; Diseases of the Respiratory Tract and Accessory Parts; Diseases of the Genito-Urinary Tract; Diseases of the Liver and Pancreas and their Ducts; Diseases of the Brain and Cord; Examination of the Nasopharynx,

Eyes, and Ears. In a book of this size this part of the subject is necessarily covered in a superficial and unsatisfactory manner and yet in these chapters we find included a considerable amount of unnecessary clinical data while rare conditions having little practical importance are given almost equal prominence with the more common conditions which should be more fully described.

Additional chapters deal with Examination and Diseases of the Bones and Joints and Post-mortem Examination of the New-born.

This book will be found of considerable value to coroners' physicians and others who have not had a special training in pathology, and to the general practitioner who is only now and then called upon to perform an autopsy.

E. MCD. S.

Life Insurance Examinations. A Manual for the Medical Examiner and for All Interested in Life Insurance. By BRANDRETH SYMONDS, A. M., M. D., Medical Director Mutual Life Insurance Co. of New York; Lecturer on Life Insurance Examinations at the University and Bellevue Hospital Medical College. G. P. Putnam's Sons, New York and London, The Knickerbocker Press. 1905.

This little book embodies the material of the lectures which Dr. Symonds has delivered at the University and Bellevue Hospital Medical College, somewhat amplified and is designed to cover the points left untouched by the different companies in their books of instruction.

While the book is a small one, it covers the ground fairly well, touching on the Fundamental Relations between the Examiner and the Company, Personal History of Disease, Examination of Women, Family Record, Habits, Residence, Occupation, Physical Examination, the Examiner's Recommendation, Relations with Agents, Frauds and Fraudulent Practices, Chemical Examination of Urine and Heart Murmurs.

The section on examination of women and the one on relations with agents are especially good. While a great deal of matter that might well have been included is omitted, all that is dealt with is of importance and the advice given is good.

SPENCER L. DAWES.

The Medical Examination for Life Insurance and its Associated Clinical Methods. With chapters on the Insurance of Substandard Lives and Accident Insurance. By CHARLES LYMAN GREENE, M. D., St. Paul, Professor of The Theory and Practice of Medicine in the University of Minnesota, Member of the Association of American Physicians, American Medical Association, Ex-President of the National Association of Life Insurance Examining Surgeons, formerly Medical Director of the Minnesota Mutual Life Insurance Co., etc., etc. Second Edition, revised and enlarged. With 99 illustrations. Philadelphia: P. Blakiston's Son & Co. 1905.

Dr. Greene presents in this second edition of his book a work of almost inestimable value to the great life insurance companies if they did but recognize the fact. For it is no exaggeration to say that a major propor-

tion of the physicians employed as examiners are not competent to act as such. "The Medical Examination for Life Insurance" is designed to correct that condition and to point out to the examiner the most approved methods for conducting an examination. It will prove of value to the experienced and competent man as well as to the student and the incompetent examiner, combining as it does the results of investigations by many medical directors of national reputation.

The first chapter is largely historical, but gives as well, the elementary principles of life insurance and explains the difference in selection as practiced by American and British companies.

The Medical Examiner and His Problems is the title of the second chapter and in it is defined what the personal qualifications of the examiner should be, his attitude to the company and to the applicant. The evils of multiple appointments and the support given the examiner by the home office are considered and it is pointed out how the conscientious examiner may be, and often is, punished for his good work, by the agent. At the same time the examiner is told not to be disgruntled by the rejection of risks which he has recommended. The dishonest agent is very accurately pictured, his methods described and the relations between the agent and the examiner is defined.

In chapter three The Role of Inspection in Diagnosis is considered and many apparently minor points which might escape attention, such as expression, attitude, gait and surroundings are noted. The pictures presented, in various acute and chronic diseases, are painted with great accuracy and in strong colors.

Next comes an explanation of the, to the applicant, interminable and useless questions which must be asked as to past history of disease.

The Collective Investigation of Actuarial Society of America is given a chapter by itself.

Heredity is given the careful consideration which it deserves and this is followed by a discussion on Occupation.

The Examiner's Decalogue is so good a one that it is worth while to give it entire:

1 Note manner, expression, complexion, nutrition, gait, speech, hand-grasp, stigmata of occupation, dress, traces of recent illness, peripheral pulsation, ptosis, etc.

2 Put the applicant at his ease.

3 Have applicant face the light.

4 Never examine in a noisy place.

5 Allow no third person to be within hearing.

6 Be sure that the questions propounded are understood and that the applicant reads the warrantee before signing the medical blank.

7 Be sure that the clothing is so arranged as to permit a thorough and painstaking examination of the chest, and then make such an examination.

8 Be sure of the identity of the applicant and of the genuineness of the specimen of urine examined.

9 After completion of your report review it carefully for minor errors and omissions. Leave nothing ambiguous or obscure.

10 Be rapid and yet thorough in your work and succinct in your report.

The first part of the book closes with a chapter on The Examination with Special Reference to Hereditary Disease and Tuberculosis.

In the second section, entitled Student's Section, careful instruction is given in the examination of the chest, the heart and blood-vessels, the lungs, the physical examination of the abdomen, and there are forty-two pages on examination of the urine. Following this we have a consideration of the insurance of "Substandard" lives, attempts to defraud insurance companies and a very comprehensive section bearing the title, Accident Insurance.

The book has marginal references throughout and abounds in illustrations and tables of all sorts. No physician who makes examinations for life insurance can afford to be without it and if the great life insurance companies should present a copy of this work to each of their examiners the purchase money would be well invested.

SPENCER L. DAWES.

NEW YORK STATE MEDICAL LIBRARY

Edited by Miss Ada Bunnell, B. L. S.

Hours of opening. The library is open for readers and borrowers each week day from 8 a. m. to 10 p. m., including Saturdays and holidays, except during July and August, when it closes at 6 p. m.

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1. That such precautions be taken in packing, as to guard against any probability of injury in transportation.
2. That the medical library shall not pay postage or express either way.

The library is collecting articles on minute subjects and will be glad to receive gifts of reprints of articles in magazines from authors or publishers.

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American Osteopathic Association. Journal. Chattanooga	615.82 qQ1
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American Public Health Association. Public Health; papers and reports. Columbus, O.	614.06 N5
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American Veterinary Medical Association. Proceedings	619 M6
Anatomischer Anzeiger. Jena	611.05 O6
Annales d'hygiène publique et de médecine légale. Paris	614.05 I9
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Annals of Surgery. Philadelphia	617.05 O2
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Archiv für Hygiene. München	614.05 O3
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 Beiträge zur klinischen Chirurgie. Tübingen 617 O3a
 Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie. Jena 616.078 qO6
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 California University. Publications: Physiology. Berkeley 612
 Canadian Practitioner and Review. Toronto 610.5 qN6
 Cape of Good Hope—Medical council. Medical and pharmacy register for the colony of the Cape of Good Hope. Cape Town 610 P3
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 Chicago Medical Recorder 610.5 P1
 Chicago Pathological Society. Transactions 616.06 P6
 Chironian. Lancaster Pa. 610.5 qO4
 Cleveland Medical Journal 610.5 Q2
 Clinical Society of London. Transactions 610.6 M8a

- College of Physicians and Surgeons, N. Y. city. Studies from the department of pathology 616 Pod
- Congress of American Physicians and Surgeons. Transactions. New Haven Ct. 610.6 O9
- Connecticut Medical Society. Proceedings. Hartford 610.6 F93
- Delaware—Health, Board of. Bulletin of the Pathological and Bacteriological Laboratory. Newark 616.01
- Dental Cosmos. Philadelphia 617.6 Mo
- Deutsche Medizinal-Zeitung. Berlin 610.5 qN5
- Deutsche medizinische Wochenschrift. Leipzig 610.5 qN5a
- Deutsche Pathologische Gesellschaft. Verhandlungen. Berlin 616.06 P8
- Deutsche Zeitschrift für Chirurgie. Leipzig 617.05 N2
- Deutsche Zeitschrift für Nervenheilkunde. Leipzig 616.8 P1a
- Deutsches Archiv für Klinische Medizin. Leipzig 610.5
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- Eclectic Review; devoted to eclectic medicine and surgery. New York 610.5
- Edinburgh Hospital. Reports 610.6 P3a
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- Florida Medical Association. Proceedings 610.6
- Folia Haematologica. Berlin 616.15
- Fort Wayne Medical Journal-Magazine 610.5 O1e
- Fortschritte der Medizin. Berlin 610.5 O3
- Frankfurt am Main, Ärztlicher Verein. Jahresbericht über die Verwaltung des Med. 610.5
- Gaillard's Medical Journal. *See* Southern Medicine
- Gazette des hôpitaux civils et militaires (La lancette française). Paris 610.5 qI8
- Gazette hebdomadaire de médecine et de chirurgie. Paris 610.5 qL3
- Georgia Medical Association. Transactions. Atlanta 610.6 K9
- Gesundheit. Leipzig 614.05 qN5
- Glasgow Medical Journal 610.5 I8a
- Glasgow Pathological and Clinical Society. Transactions 616.06 O4
- Guy's Hospital, London. Reports 610.6 J6a
- Lagynécologie. Paris 618.1 P6a
- Hahnemannian Monthly. Philadelphia 610.5 M5a
- Der Hausdokter. New York 610.5
- Health. New York 613.05
- Health Culture. New York 613.05 qP5
- Homœopathic Medical Society of the State of New York. Transactions 610.6 M3

- Homœopathic Medical Society of the State of Pennsylvania. Transactions. Philadelphia 610.6 M6a
- Illinois-Pharmacy, Board of. Annual report, with abstract of state pharmacy register. Springfield 615.06 O2
- Index Medicus. Washington D. C. 016.61 q1n2
- Indiana State Medical Society. Transactions. Indianapolis 610.6 Lo
- Indian Medical Gazette. Calcutta 610.5 qM6b
- Institut Pasteur. Annales. Paris 616.01 qO7a
- Intercolonial Medical Journal of Australasia. Melbourne 610.5 P6a
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- International Hahnemannian Association. Proceedings 610.6 O1a
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- Johns Hopkins Hospital. Bulletin. Baltimore 610.5 qO9
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- Journal of Medical Research. Boston 610.5 P6d
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- Journal of nervous and mental disease. New York 616.8 N3
- Journal of Ophthalmology, Otology and Laryngology. New York 617.7 O9
- Journal of Osteopathy. Kirksville Mo. 615.82
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Journal of Physiology. London	612.05	N8
Journal of the American Medical Association. Chicago	610.5	qO3a
Journal of the Kansas Medical Society. Lawrence Kan.	610.5	
Journal of Tropical Medicine. London	610.5	
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Kansas State Medical Society. Proceedings. Topeka	610.6	M7b
Kentucky State Medical Society. Transactions. Louisville	610.6	L6
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Lancet. London	610.5	qI3a
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Maine Medical Association. Transactions. Portland	610.6	L1b
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Medical News. New York	610.5	qK3
Medical Record. New York	610.5	qMb
Medical Review of Reviews. New York	610.5	P5b
Medical Times. New York	610.5	qL1a
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Medicinische Blätter. Wien	610.5	qN8
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Michigan State Medical Society. Transactions. Detroit	610.6	N7b
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Minnesota State Medical Association. Transactions. St Paul	610.6	Nob
Mississippi State Medical Association. Transactions. Jackson	610.6	L6a
Mississippi Valley Medical Association. Transactions. Louisville	610.6	N5a
Missouri Medical Association. Transactions. St Louis	610.6	Loc

Missouri Pharmaceutical Association. Proceedings	615.06
Monatsschrift für Geburtshülfe und Gynäkologie. Berlin	618 qP5
Monatsschrift für Psychiatrie und Neurologie. Berlin	616.8 qP5
Montreal Medical Journal	610.5 N3
Münchener medizinische Wochenschrift	610.5 qL4
Nashville Journal of Medicine and Surgery	610.5 L1
National Association of Dental Faculties. Proceedings	617.6
National Eclectic Medical Association. Transactions. New York	610.6 N2
Naturapath and Herald of Health. New York	613.05 Q0
Nebraska State Medical Society. Transactions. Lincoln	610.6 M9
New England Medical Gazette. Boston	610.5 M6a
New Hampshire Medical Society. Transactions. Concord	610.6 F91
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New Jersey Pharmaceutical Association. Proceedings	615.06 No
New York Academy of Medicine. Transactions	610.6 L1
N. Y. (State)-Cancer Laboratory. Annual report. Buffalo	616.994
New York Medical Journal and Philadelphia Medical Journal	610.5 qM5
New York Medical Times. <i>See</i> Medical Times	
New York Pathological Society. Proceedings	616.06 O7
New York State Dental Society. Transactions	617.6 M9
New York State Eclectic Medical Society. Annual meeting	610.6
New York State Journal of Medicine. New York	610.5 qQ1b
New York State Medical Society. Transactions	610.6 G9a
New York State Pharmaceutical Association. Proceedings.	Elmira
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North American Journal of Homoeopathy. New York	610.5 L1a
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Notizkalender für praktische Ärzte	223a
<i>See</i> Therapeutischer Notizkalender für praktische Ärzte.	
Obstetrical Society of London. Transactions	618.2 Mo
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Odontological Society of Great Britain. Transactions. London	617.6 L6
Ohio Sanitary Bulletin. Columbus	614.05 P5
Ohio State Medical Society. Transactions	610.6 K6a
Ophthalmological Society of the United Kingdom. Transactions. London	617.7 O1
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Pharmaceutical Journal. London	615.05 qK2
Pharmaceutical Society of Great Britain. Calendar	615.4 N3
Philadelphia Medical Journal	
<i>See</i> New York Medical Journal.	
Physician and Surgeon. Detroit	610.5 qN9

Post-graduate; a monthly journal of medicine and surgery.	New York	
	610.5	O6
Practitioner.	London	610.5 qK9
Prager medizinische Wochenschrift		610.5 qN3a
La presse médicale belge.	Bruxelles	610.5 qK9
Le progrès médical.	Paris	610.5 qN30
Progressive Medicine.	Philadelphia	610.5 P9
Providence Medical Journal		610.5 qQ0
Public Health.	London	614.05 O9
Public Health; a monthly journal of sanitation.	Philadelphia	614.05
Quarterly Journal of Inebriety.	Hartford	178.05 Q2
Review of Neurology and Psychiatry.	Edinburgh	616.8
Revue de chirurgie.	Paris	610.5 O1a
Revue de la tuberculose.	Paris	616.246 P3
Revue de médecine.	Paris	610.5 O1b
Revue médicale du Canada.	Montréal	610.5 qP8a
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Rhode Island Medical Society. Transactions.	Providence	610.6 L9a
Royal Academy of Medicine in Ireland. Transactions.	Dublin	610.6 O3
St Bartholomew's Hospital.	London, Reports	610.6 M5
St Louis Medical and Surgical Journal		610.5 K3c
St Mary's Hospital Gazette.	London	610.6
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Sanitarian.	Brooklyn	614.05 N3
Sanitary Inspector.	Augusta Me.	614.05 O7
Sanitary Institute. Journal.	London	614.06 Oo
Sanitary Record.	London	614.05 qN4
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Southern Medicine and Gaillard's Medical Journal.	Savannah	610.5 qM6a
Southern Surgical and Gynecological Association. Transactions.	Philadelphia	618.1 O9
Teachers' Sanitary Bulletin.	Lansing Mich.	614.05
Tennessee State Medical Society. Transactions.		610.6
Texas Medical News.	Austin.	610.5 P1b
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Therapeutic Gazette.	Detroit	615.5 qN7
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Therapeutische Monatshefte.	Berlin.	615.5 qO7
Therapeutischer Notizkalender für Praktische Ärzte.	Berlin.	613.12 O6a
Trained Nurse and Hospital Review.	New York.	610.73 O8

University Medical Magazine. *See* University of Pennsylvania Medical Bulletin

University of Pennsylvania Medical Bulletin. Philadelphia 610.5 qO8b
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Vermont State Medical Society. Transactions. Burlington 610.6 H4

Virchows Archiv für pathologische Anatomie und Physiologie.

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Virginia Medical Semi-monthly. Richmond 610.5 qP6b

Virginia Medical Society. Transactions. Richmond 610.6 Noa

West Virginia Medical Society. Transactions. Wheeling 610.6 M8b

Western Medical Review. Lincoln Neb. 610.5

Wiener Klinik 610.5 qN5b

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Wiener medizinische Presse 610.5 qMoA

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Wisconsin State Medical Society. Transactions. Milwaukee 610.6 M7a

Zeitschrift für Elektrotherapie. Leipzig. 615.84

Zeitschrift für Heilkunde. Wien. 610.5 Ood

Zeitschrift für Hygiene und Infektionskrankheiten. Leipzig 614.05

Zeitschrift für klinische Medicin. Berlin 610.5 qOoc

Zeitschrift für wissenschaftliche Mikroskopie. Leipzig 578 O4

Zentralblatt. *See* Centralblatt

MEDICINE

Edited by Samuel B. Ward, M. D., and Hermon C. Gordinier, M. D.

Concerning the Prognosis of Diabetes. (Zur Prognose des Diabetes.)

HIRSCHFELD. *Deutsche medicinische Wochenschrift, February 7, 1905.*

In considering the prognosis of diabetes, one of the most important things to be borne in mind, is that in severe cases most patients die in a few years. Only a small percentage of them, under the most favorable conditions, live longer than five years. Conditions are quite different in the mild forms of diabetes. In considering the mild forms, most physicians agree with Naunyn, that under favorable conditions of life, and if the patient behaves himself, the disease does not very materially shorten life. Naunyn says in this connection, "It is quite common to see patients with diabetes in whom the disease developed around the forty-fifth year live for ten or even fifteen years from that time. While all physicians have had diabetic patients, who have lived fifteen or twenty years after the beginning of the disease, and were able to follow their occupations, the author has found in the cases studied by him, that only part of the patients were so fortunate."

According to Kulz, who has reported a large number of cases with 192 deaths, the mortality rate increases after the fiftieth year. He found that

between the fortieth and fiftieth years the average length of life of diabetics was 4.98 years; between the fiftieth and sixtieth years, 6.2 years, and between the sixtieth and seventieth years 6.6 years. The conclusion that may be drawn from this is that the more severe cases occur earlier in life. The result in sixty-four deaths was found to be as follows: fifteen cases between the fortieth and fiftieth years showed an average duration of life of 8.3 years; thirty-three cases between the fiftieth and sixtieth years an average of 8.3 years, and sixteen between the sixtieth and seventieth years, an average of 9.9 years.

The author arrived at similar conclusions in a study of forty-seven fatal cases, *i. e.*, an average duration of life of 8.4, 7.9, and 9.2 years. These figures are of interest because they show that in the mild form of diabetes, life is not much more shortened between the sixtieth and seventieth years, than between the fortieth and fiftieth years.

Von Noorden, while he takes an optimistic view of the mild form of diabetes, still comes to the conclusion that a diabetes continuing for twenty years belongs to the exceptional cases. In answer to the question whether perhaps a certain class of cases must be distinguished in considering the so-called mild form of diabetes, the author states that first of all much depends upon the status of the glycosuria. The old doctrine of Traube and Seegven, that a patient has the severe form of diabetes who, after the withdrawal of all carbohydrates from the diet still shows the presence of sugar in the urine, still holds good in the present division of diabetes into mild and severe forms. To the mild forms belong those cases in which sugar does not appear in the urine after the withdrawal of carbohydrates from the diet.

No opinion however can be given of the severity of a case after only observing it for a short time, because a case sometimes when it first develops, appears more severe than the subsequent course of the disease proves it to be. A fair prognosis of any case can only be given if it has been under observation for several months. A special type of the disease was noticed in a group of diabetics in whose urine twenty to fifty grammes of sugar appeared after the administration of 100 grammes of carbohydrates. These cases showed special complications and an unusual course of the disease. The author classifies this group of cases as those of medium severity.

Diabetics then, whose urine shows the presence of from ten to twenty grammes of sugar belong to this class. The most important complication of this class of cases is nephritis. Senator and Rumpf have called attention to the frequent occurrence of nephritis in diabetes.

Von Noorden found, among his diabetics, 10.8 per cent of cases of nephritis, Grube 9.3 per cent, and the author in his material 11.5 per cent. The author demonstrated the interesting fact in this connection, that in the group of cases of medium severity, nearly a third of the patients developed nephritis, while this complication was much less frequent in the other cases observed by him. The following table gives the results of his investigations in this connection: (a) sixty-four cases of the severe form with only one case of nephritis; (b) sixty-nine cases of the middle form with twenty-one cases; (c) forty-four cases of the mixed variety

with eight cases; (d) seventy-four cases of the mild form with two cases, making altogether 251 cases of diabetes with twenty-nine cases of nephritis, or 11.5 per cent.

The author states however that it is important not to make the error of considering the percentage of sugar only after the appearance of the nephritis. In many, although not in *all* cases, the glycosuria as is well known *then* becomes less. The nephritis as a rule develops from the fourth to the seventh year after the beginning of the diabetes. After eight or nine years, nephritis is rare, and after twelve years the author has never found a case nor was he able to discover a well authenticated case in literature. The age of the patient is of some importance; in most cases nephritis develops between the fortieth and fifty-fifth years.

Polymia seems to favor the development of nephritis. This observation is of importance because it is a fact brought out by Claude Bernard, and frequently mentioned in French literature, that in diabetics who develop polymia the kidney becomes enormously enlarged. The normal kidney weighing about 125 grammes, often reaches the weight of from 180 to 240 grammes. The excessive secretion of urine by causing a certain amount of irritation of the kidney tissue, may finally lead to inflammation of the kidney. In regard to the duration of the nephritis, the author makes the following statement: Stokvis and Grube give a favorable prognosis in such cases. The author, however, agrees with Fubringer and Von Noorden, that this complication has an unfavorable effect on the course of the disease, the cases running approximately only about three years.

The author comes to the following conclusions: cases formerly classified as mild forms of diabetes on the whole should not be so called; out of the cases so classified, a part may be included in the class of cases of medium severity. In these, after the administration of one hundred grammes of carbohydrates, twenty to fifty grammes of sugar still appears in the urine. In this form nephritis is most likely to develop. In this form also the danger of arterio-sclerosis and heart trouble is relatively greater than the age of the patient would indicate.

The Occurrence of Epileptic Convulsions in Diabetic Coma. (Ueber das Vorkommen epileptischer Krämpfe beim Coma der Diabetiker.)

J. LOSSEN. *Zeitschrift für klinische Medicin*, 56 Band, 1 u. 2 Heft, 1905.

The fatal character of nervous symptoms in diabetes has long been known. Kussmaul first outlined the symptomatology of the coma which has since carried his name, but this is unfortunate as other nervous symptoms allied with coma, frequently occur, as, for instance, tonic and clonic muscular spasms. A distinction might also be made between dyspnoeic and non-dyspnoeic diabetic or Kussmaul's coma. Complications may hasten a fatal termination in states of coma, as pulmonary phthisis, septic processes, and the frequently occurring chronic nephritis with uraemia. Comatose conditions may further occur with organic cerebral conditions associated with diabetes. In many cases it is impossible to say whether the complication is accidental or bears an actual relation to

diabetes, as might be the case with epilepsy, which may terminate in status.

Cases of non-dyspnoeic coma are quite rare, and raise the question of the correlation of the nervous symptoms with the diabetic disturbances of metabolism. The writer reports two widely different cases. The first was that of a young woman whose diabetes had existed for a year. The daily excretion of sugar on mixed diet exceeded six hundred grammes, although there was no abnormal formation of acid. Weak chloride of iron and distinct acetone reactions detected at first, diminished in a few days, and returned with a distinct lessening of carbohydrate (150 grammes of bread), increasing quickly, especially after entire withdrawal of carbohydrate. β -oxybutyric acid was also detected by left rotation of the fermented urine. The urine then remained either alkaline or neutral on the exhibition of large doses of bicarbonate of soda. On the fifth day of the withdrawal of carbohydrate there suddenly occurred, without any warning, severe disturbances of the nervous system, with complete amaurosis and mental unrest, followed by typical epileptiform tonic and clonic attacks, which for the most part began in the left arm, and affected the left half of the body much more than the right. The sensorium, after a short interval, was dulled. The respiration showed no involvement beyond a slight acceleration; there appeared no indication of diabetic dyspnoea. After about eight hours the attacks became less frequent, finally ceased, and the patient remained comatose. With high fever and pulmonary oedema, death ensued. The author excludes all other conditions, and attributes the epileptic seizure not to acid coma, but to some other metabolic change of diabetic origin, the real nature of which is unknown.

In the second case were all the signs of acid intoxication. The disturbance of consciousness was relatively slight, the respiration was dyspnoeic, and both inspiration and expiration were deepened as in Kussmaul's symptom-complex. Finally, epileptiform attacks ensued. In this case the author regards the eclamptic seizures, like the ordinary Cheyne-Stokes' breathing, as a sign of the dissolution of the already injured central nervous organs.

MEDICINE

The Diagnosis and Treatment of Tuberculosis of the Kidney. (Zur Diagnostik und Therapie der Nierentuberculose.)

LEOPOLD CASPER. *Deutsche medizinische Wochenschrift*. 1905, Nos. 3 and 4

Formerly it was believed that tuberculosis of the kidney was usually an ascending infection from the sexual organs. This view is no longer held but on the contrary it has been conclusively shown that as a rule the process begins primarily in the kidney and is a haematogenous infection. Most cases of tuberculosis of the kidney are unilateral in the early stage. It has furthermore been demonstrated that tuberculosis of the kidney is much more frequent than has been hitherto supposed and that it also occurs very much more frequently than it is diagnosticated. This is due in part to the fact that except in a certain

stage the disease gives practically no symptoms and in part to the fact that sufficient emphasis has not been laid on the presence of cloudy purulent urine. The usual objective symptoms such as pain on urination, increased frequency of urination, pain in the region of the kidney and tenderness of the kidney may be entirely absent. One rather important symptom is the occurrence of attacks of colicky pain, assumed to be due to a temporary obstruction of the ureter. The appearance of the patient may be indicative of the best of health. The condition of the urine is of the greatest importance, especially the presence in it of tubercle bacilli, which occur in about eighty per cent of the cases of tuberculosis of the kidney. The absence of all forms of bacteria from the urine of cases of cystitis is strong presumptive evidence of the tuberculous nature of the affection.

To determine the presence or absence of tubercle bacilli the inoculation of guinea pigs is often indispensable. The use of tuberculin is sometimes of value although much less positive in its indications than in tuberculosis of bones and joints. Frequently there is some doubt as to whether the kidney or the bladder is the site of the tuberculous infection. It should however be born in mind that in doubtful cases of tuberculosis of the urinary tract in which the genital apparatus is not involved the infection is usually primary in the kidney and only in rare instances does primary tuberculosis of the bladder occur. Even the cystoscopic picture may sometimes seem to indicate the presence of tubercles in the bladder when on more careful investigation this is found to be due to the so-called cystitis granulosa. The functional investigation of both kidneys separately is also of great value in determining if only one kidney is affected and also whether or not the other kidney is capable of carrying on the work.

The treatment of tuberculosis of the kidney is either surgical or hygienic and diatetic. The inoperable cases usually run a rapid course, occasionally they pass over into a chronic condition. In the writer's experience individuals with tuberculosis of the kidney who were in a condition to undergo an operation and did not have it offered a very bad prognosis. The disease usually extends to the ureter and bladder and frequently metastasises to other parts of the body. Even in cases where the process remains localized in the kidney the toxic effect upon the general system is bad. In only three cases in the writer's experience in which he has found a fairly definite tuberculosis of the kidney and urged an operation which was not performed has the process remained quiescent. The tuberculous process in the kidney usually progresses rather slowly. As soon however as distinct suppuration is evident those patients suitable for operation should have one. The fact that the patient's general condition is bad is no contra-indication to the operation if the process is localized in one kidney. Another desirable feature of a case to be operated upon is a good heart action. If one studies the cases from the literature carefully it is apparent that heart failure has often been the cause of death. For it is a well known fact that nephrectomy puts a great demand upon the strength of the heart. Marked arterio-sclerosis is a contra-indication to operation.

Tuberculosis of the bladder is in itself no contra-indication and the determination of the sufficiency of the other kidney is of the greatest importance. The failure to carefully investigate this has been responsible for the relatively high mortality following nephrectomy in tuberculosis of the kidney. The comparison of the mortality following nephrectomy before and after the introduction of the catheterization of the ureters is striking. Of twenty-eight cases of death following nephrectomy in cases in which the ureters were catheterized 22.7 per cent were the result of insufficiency of the kidney while of thirteen deaths following nephrectomy upon cases in which the ureters had been catheterized only 7.7 per cent were due to kidney insufficiency.

The writer concludes with the statement that the more the catheterization of the ureters and functional diagnosis of the kidney is practiced the more successful will be the results of the surgical treatment of tuberculosis of the kidney.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

The Toxic Effects of Formaldehyde and Formalin.

MARTIN H. FISCHER, *The Journal of Experimental Medicine*, Vol. VI, Nos. 4, 5, 6, February 4, 1905.

The germicidal effects of formaldehyde and formalin have been much studied but their action upon the animal economy has been practically neglected, hence Fischer's researches.

[By formaldehyde is meant the gas, formic aldehyde, CH_2O , and by formalin is meant a forty per cent. solution of the former in water. The percentage of solutions relates to the amount of formalin in the solution. Thus a ten per cent. formalin solution contains four per cent. of formaldehyde. The tissues were fixed in Zenker's fluid and the staining was by means of eosin and haematoxylin supplemented by Sudan III, Weigert's fibrin stain and polychrome methylene blue.

The first series of experiments were for the purpose of showing the changes in the lungs after the inhalation of formaldehyde and were performed in a room of 5.5 cubic metres capacity. The door was closed, but keyholes, cracks, etc. were not plugged. The gas was generated by means of a Schering's disinfecting lamp and in all nine animals were used, guinea pigs, rats, dogs and cats.

In the second series, formalin was injected into the stomach by means of a soft rubber catheter introduced through the oesophagus. In all eleven animals were used, and in all, the symptoms differed. From four cubic centimetres to seventeen cubic centimetres were injected of formalin five per cent. to ten per cent. strong, the strength depending upon the size and weight of the animal and in all but two cases death followed at a longer or shorter interval.

In the third series, twelve guinea pigs, two rabbits and five dogs were used and formalin varying in strength from 1-1000 to undiluted formalin was injected intraperitoneally by means of an hypodermic syringe under antiseptic precautions. Experiments to determine the lethal dose of

formalin introduced intraperitoneally were performed upon guinea pigs with the following results:

(a) Two guinea pigs died within two days after the injection of one cubic centimetre of a 1-1000 formalin solution for each 100 grammes of body weight.

(b) Five guinea pigs died within twenty-four hours after the injection of two cubic centimetres of 1-1000 formalin for each 100 grammes of body weight.

(c) One guinea pig, weighing 345 grammes, died three days after the injection of six cubic centimetres of 1-1000 formalin.

(d) One guinea pig weighing 306 grammes, withstood the injection of three cubic centimetres of 1-1000 formalin; at the end of four weeks the animal weighed 400 grammes, and withstood the injection of eight cubic centimetres of formalin of the same strength.

(e) Four guinea pigs were killed by two cubic centimetres of one per cent. formalin in periods ranging from six to twelve hours.

Formalin was injected through the chest wall into the lungs in the fourth series and all grades of strength between 1-1000 to undiluted formalin were used.

In series five, Subcutaneous Injections of Formalin, formalin ranging in strength from one-tenth per cent. to ten per cent was injected under the skin of the hind leg, or under the skin over the ribs of guinea pigs and rabbits.

The histological findings were in all cases quite similar but varied in severity and extent with the amount injected.

The effect on the muscles is considered in the sixth series. After injection of formalin varying in strength from one-tenth per cent. to 100 per cent. into the leg muscles of dogs and rabbits, it is usually found at autopsy that the chemical has acted upon a circumscribed area of tissue.

The effect of formalin and formaldehyde on the eye, the changes in the liver, kidneys, lungs and other organs as well as what he calls "Chronic Formalin Poisoning" is studied and Fischer then summarizes his results as follows:—

1. The inhalation of formaldehyde gas in even small quantities is followed by bronchitis and pneumonia. Pneumonia is due to the inhalation of the gas and not to secondary infection.

2. Formalin belongs to that rare group of poisons which are capable of producing death suddenly when swallowed.

3. The introduction of formalin into the stomach is followed by the production of a gastritis which varies greatly in character. The duodenum and upper jejunum may also be involved in the inflammatory process.

4. Intraperitoneal injections of formalin cause peritonitis of a fibrino-hemorrhagic character. A definite reaction is obtained when very dilute formalin (1-1000) is employed. In the peritoneal cavity formalin exercises a destructive action on all organs (pancreas, liver, peritoneal fat, Fallopian tubes, etc.) with which it comes in contact and causes inflammation in these organs.

5. The lethal dose of formalin when injected intraperitoneally into guinea pigs is approximately two cubic centimetres of 1-1000 formalin for each 100 milligrammes of body weight.

6. The injection of formalin into the lungs is followed by pneumonia and bronchitis.

7. The inflammation which follows subcutaneous injections of formalin is characterized by intense exudation.

8. The injection of formalin into the muscles produces myositis.

9. The injection of formalin into the anterior chamber of the eye causes the accumulation of an exudate containing leucocytes and fibrin. When formalin is dropped into the conjunctival sac iritis follows and may be severe enough to destroy the eye.

10. Formalin in whatever way introduced into the body is absorbed and is then capable of producing lesions in the parenchymatous organs.

11. Changes in the liver after the absorption of formalin consists of mild or severe grades of cloudy swelling accompanied by vacuolation of the protoplasm, changes in the nuclei and leucocytic infiltration. Focal necrosis may result. Similar results follow the inhalation of formaldehyde.

12. The injection of formalin or the inhalation of the vapors of formaldehyde produces cloudy swelling of the parenchyma of the kidneys. Focal necrosis may result.

13. Pneumonia and bronchitis are found in all animals after the injection of formalin.

14. The leucocytic infiltration which follows the introduction of formalin into an organ has these general characteristics: The eosinophiles are the first leucocytes to appear; these are followed by polynuclear leucocytes; last appear the large and small mononuclear leucocytes. Similar phenomena occur in the trachea, bronchi, and lungs of animals subjected to formaldehyde inhalations.

15. Formalin is, directly or indirectly, chemiotactic for leucocytes. The tissues which are not infiltrated with leucocytes after the injection of formalin are those which have been so injured by the chemical that an inflammatory action is impossible.

16. Animals subjected to chronic poisoning with formalin administered by intraperitoneal injection develop fibrinous peritonitis, associated with marked eosinophilia. The changes in the kidneys and liver consist of cloudy swelling, fatty degeneration, focal necrosis and leucocytic infiltration.

The Value of Hetol in Pulmonary Tuberculosis.

T. BARRETT HEGGS. *The Lancet*, (Lond.), October 22, 1904, p. 1136.

The value of hetol (the synthetic cinnamate of sodium) is still in doubt because the short periods of treatment make many of the observations valueless. The hetol was used intravenously and in the seven cases reported, the blood for counting was always taken four hours after a meal and at the same hour on alternate days and tubercle bacilli had been demonstrated in the sputum before treatment was commenced. The technique and method employed comprised a four hours disinfection of the skin with a perchloride compress and sterilization of the instruments. The large veins of the arm were used and Prof. Landerer's method of graduated increase of dose on alternate days was employed. The maximum dose varied from twenty to fifty milligrammes and no ill effects fol-

lowed in any case. While a definite leucocytosis was produced by each injection and the normal count was often doubled, it was not in proportion to the amount used, the maximum being usually obtained with twenty milligrammes.

Case I. Man of twenty-nine years, had five severe attacks of hemoptysis, had definite constitutional symptoms and had lost seven pounds in three months. There was consolidation with numerous crepitations at both apices, more marked on the right side and apices of both lower lobes were affected. Reaction to hetol gave a marked leucocyte count, four hours after injection of two milligrammes, of 13,400 per cubic millimetre, his normal being 8000. After six weeks of treatment the sputum disappeared, only an occasional sibilus was heard over the right apex behind, there were no cough and no adventitious sounds over the rest of the lungs. There was no increase in weight, doubtless due to a severe indigestion which complicated the case.

Case II. Woman of thirty-five years, of phthisical family, duration of disease six months. There was diffuse active infection of the right lung and catarrh of the left bronchial tubes with frequent cough and mucopurulent sputum. In seven weeks from the commencement of treatment the cough and sputum had subsided, the right base and axilla were quite dry, the only crepitations being in the right apex and in the left apex behind. For about twelve weeks more the woman was treated as an out-patient and although her surroundings were very poor and she had six children to look after, the eldest twelve years of age, she still improved. After five months of treatment she had scarcely any cough, only an occasional crepitation in the left apex and no sputum. The gain in weight was three pounds.

Case III. Man, aged thirty-five years. Had hemoptysis five years before; sputum and cough had been much worse lately. He was admitted after hemoptysis about four ounces. Temperature 100 degrees Fahrenheit. There were marked active signs at the right apex and consolidation in the left. His leucocyte count was 7,500; four hours after injection of one milligramme of hetol it was 11,500; after eight milligrammes it was 12,750; and after eleven milligrammes it was 16,000. After twenty injections he had gained ten and one-half pounds, the lung was almost dry, the cough was slight and the sputum gone.

It is not necessary to give the history of each of the other cases as they are similar to the ones already studied, but the following table will show the effects in the seven cases.

No	Sex	Age	Duration	STATE OF DISEASE.	Days of treatment	No. of Injec.	Max. Dose	Gain in lbs.	Effect on lung
1	M	29	2 yrs..	Active in both apices and both lower lobes.....	44	17	30mg.	0	Much improved.
2	F	35	6 mo..	Diffuse in one lung.....	136	61	35mg.	3	Much improved.
3	M	35	5 years	Active in one apex.....	42	20	20mg.	10½	Much improved.
4	M	39	1 year.	Diffuse in one lung, cavity at one apex.....	50	24	20mg.	7	Much improved.
5	F	27	?	Diffuse.....	185	80	50mg.	1½	Much improved.
6	F	24	4 years	2 apices and lower lobe....	49	17	20mg.	½	Improved.
7	M	42	2 mo..	2 apices and lower lobe....	42	23	25mg.	5	Much improved.

Dr. Hegge's conclusions are that hetol, though not a specific, is a useful adjunct to any other treatment of tuberculosis.

ALBANY MEDICAL ANNALS

Original Communications

REPORT OF THE COMMITTEE ON THE CLASSIFICATION OF THE FORMS OF INSANITY.

Read and adopted at a meeting of the Association of Superintendents and Trustees of State and Incorporated Hospitals of Pennsylvania, held at the State Institution for Feeble-Minded, Polk, Pa., May 23 and 24, 1905.

By JOHN B. CHAPIN, M. D.; HUGH B. MEREDITH, M. D.;
D. D. RICHARDSON, M. D.; and GEORGE I. McLEOD,
M. D., Secretary of State Board of Lunacy.

At the meeting of your Association held May, 1904 a resolution was adopted providing for the appointment of a committee on Classification of Insanity. The undersigned were duly appointed and now present a report. This duty was not solicited, but was assigned to us and has been entered upon with some diffidence, and I might add with becoming deference to all those who with greater authority than we can lay claim to, have essayed to classify the various forms of insanity in a manner that would be generally accepted. Classifications of insanity have been presented from the time of Pinel and Esquirol, one hundred years ago. They have been prepared by authors, clinical observers, and associations of alienists of all countries where such organizations have existed. Any organization or individuals may prepare and announce a classification of the forms of insanity which will have recognition and be accepted as it proves to be in accord with general experience. There is no appellate court of last resort whose judgment upon this question will be accepted as final, yet it is of great importance that there should be as much uniformity as possible. If all hospitals and medical associations adopted a uniform classification in their public reports—and we might add if all persons concerned were governed by some general principles in preparing tables—then it would be possible to present large aggre-

gations of similar cases and compare results of great value to the student of statistics. It has constantly happened that a personal element, or theories, have prevailed in the adoption of a classification. In one instance nine per cent. of all admissions were allotted to one form, and under a different system of classification the particular form entirely disappeared. New terms have repeatedly appeared and been dropped in our medical reports. In several of the hospital reports of our own country tables of the forms of mental disease are wholly omitted, although it cannot be inferred that insanity has disappeared. Then, again, forms are plainly duplicated in the same tables. The lack of uniformity might excite some speculation that the conscientious physician compiler might have too little confidence in his own judgment or there may be a lack of appreciation of the value of any tables, the elements of which are from the nature of things clouded by uncertainty. Perhaps there is a feeling, with which the committee is in sympathy, that the time has not yet arrived when a general consensus or agreement can be reached, as sufficient knowledge does not exist to base a classification of insanity upon its causation alone, upon its gross pathology, or upon any theories of mental pathology. The attempt to form a system of classification upon the existence of prominent delusions, as for instance, a supposed uncontrollable impulse to burn, to commit homicide, to steal, etc., on the hypothesis that the human mind was made up of a variety of distinct faculties or centers, any one of which might be excited to automatic action, independent of all of the others, has not been accepted, although these views held a place in medical literature and in the popular mind for a long time. The doctrine of monomania, that homicidal insanity (a single impulse to kill); kleptomania, or a propensity to steal; pyromania, an impulse to burn and other criminal tendencies are instances of distinct forms or kinds of insanity, is now no longer accepted. The doctrine is rather a specimen of psychologic theorization than a deduction derived from clinical experience, or the study of cases. As if to add mystery to conditions already obscure, the dictionaries of the dead languages have been robbed to furnish names of supposed distinct forms of disease.

While the importance of an agreement upon a uniform classification of forms of insanity may be generally conceded, it is not likely to be reached in the present state of our knowledge. The

Psychological Association of Great Britain in 1902, appointed a committee to consider the classification and other statistical tables adopted in 1882, and report whether any modifications or changes were advisable. This committee reported in 1903, and no agreement has yet been reached. Other national associations and many writers exercising the privilege of authorship have presented schemes for classification. Under the circumstances there might be an exhibition of becoming modesty and hesitation in entering a field of contention so ably occupied by the masters in our specialty for a century.

The annual reports that are presented from our hospitals are perused by all classes of the community. They are not intended for the professional reader alone, and the subjects presented should be in plain language that can be comprehended by the laity or non-professional reader. In the usual medical tables containing the forms of insanity, certain generic terms have been in common use for such a long period that the judges of the courts, lawyers, and intelligent and well-informed persons not of the medical profession, have a fair understanding of their meaning. It has been a great gain in court proceedings concerning insanity questions that juries can arrive at definite conclusions assisted by the common speech and understanding of people of terms in general use. It would be a serious loss and embarrassment if the terms melancholia, mania, dementia and even paresis, for instance, were to be supplanted by new terms.

The committee are of the opinion that the hospitals in making their reports of admissions to the State Committee on Lunacy should continue to adhere as far as possible to the use of the generic terms named above, because they are commonly understood by the professional and non-professional class to be forms and conditions of mental disorder. The medical officers of hospitals might still feel at liberty to adopt such other subdivisions and amplifications of these terms in their annual reports as they may desire, but new terms it must be understood do not necessarily mean new discoveries or advances in science any more than the newly bound book always contains wholly original matter.

For one hundred years and more students of the human mind, or we might rather refer to them as students of normal psychology, have discussed and classified its faculties. With-

out agreeing upon a uniform and exact classification of the faculties of the human mind in its normal condition, there is a general assent that there exists the faculty of forming conclusions or judgments to which information conveyed by the senses, the ability to apply the power of attention, to make comparisons, and memory, all contribute. The ability of the mind to form a conclusion or judgment has been called the reasoning or intellectual faculty. There are also sensations conveyed by each of the senses, and when the brain takes cognition of them they are called perceptions. There are the emotions, or feelings, and the will-power, or that faculty that is said to energize or carry conclusions into effect.

A condition or state of insanity is determined by a prolonged change in the intellectual faculties, or the existence of sensory disturbances, loss of memory or perverted will-power, or a weakening and general failure of all the mental faculties. The student of abnormal psychology finds in all of these changes the evidences of insanity. They are the symptoms of the disease which the physician observes in the conversation, the actions of the patient, and the actual delusions which account for them may be soon or late revealed. The patient has changed in respect to his way of thinking and acting as compared with his normal state, not for the moment, but for a prolonged period, as for weeks and months, or the whole period of life.

Without going further into a presentation of the clinical condition or mental pathology of insanity, it is sufficient for our present purpose to state that there is a general agreement among students of normal psychology as to a division of the faculties of the human mind. The alienist, or the student of abnormal psychology, has had no alternative but to accept the generic divisions of the psychologist as the only principle to guide him in the preparation of a uniform classification for general use. In the present state of our knowledge, your committee does not advise that we discontinue to use the generic terms,—melancholia, mania, dementia, and general paresis, with such subdivisions or additions as seem warranted, preferring to adhere to terms that have been sanctioned by long usage; that are familiar to the medical profession, the courts and legal profession; and which also have a place in the standard dictionaries of our language. By the use of any of these terms we do not aim to describe a distinct entity or disease, but to classify.

forms of mental disturbances or disordered actions of the mind in accordance with the principles of the division of the faculties upon which psychologists are generally agreed. While the names of these groups are not intended to stand for distinct forms of disease, the members composing them show such a uniformity of typical symptoms that they can be classified with as much accuracy as the manifestations of the normal mind.

The Committee do not assume to have authority to recommend to the medical superintendents the adoption in their individual annual reports of the classification they will present for your consideration. This report is intended partly as a protest against a redundant classification that is not uniformly accepted or in general use. They would not seek to restrict that liberty of discussion and study that science should always encourage rather than restrain. They are of the opinion, however, that the members of this Association may accept a classification which will be the basis of their reports to the State Committee on Lunacy of the forms of insanity in making the returns of admissions to the Secretary of the Committee on Lunacy required by law, leaving to each medical superintendent the adoption of such classification as he may for any reason prefer in the preparation of his annual report to the trustees.

In any scheme it would be an advantage to have the approval of the Committee on Lunacy. The Committee on Lunacy have never required any special classification for the preparation of their annual report, very properly leaving to the physicians of the various institutions entire freedom. The annual reports of the Committee on Lunacy publish what is forwarded to their office, and would probably accept any classification that might be acceptable to this body, if uniformity is desired and recommended.

Your Committee recommend that reports of admission to the several hospitals and licensed institutions of the state conform to the following classification of forms of insanity, viz:

Melancholia.

Mania.

Dementia.

Paresis.

Toxic Insanity.

Imbecility.

Epilepsy.

It is believed that these generic terms comprise the forms of mental disease which are required by our lunacy laws to warrant legal detention in a hospital for the insane. These terms simplify our nomenclature. The prominent manifestations or symptoms, as they appear in every case, furnish the elements essential to a classification at the time of making the examination. These terms are familiar to our courts, to the medical and legal professions, and are readily comprehended from long usage by the laity. They are founded on the principle, as the terms signify from their derivatives, that insanity is manifested by disorder of the intellectual faculties, the feelings, or a loss of mental power. They are subject to many sub-divisions, if there can be any general acquiescence; otherwise new terms would not be helpful and might rather be confusing.

EXTRA-ARTICULAR TUBERCULOSIS OF THE BONES.

By CHARLES GREENE CUMSTON, M. D.,

Boston, Mass.

Tuberculosis of the bones is met with under two very different anatomical forms; sometimes diffused with the aspect of granulations, but more often limited in one or more foci. It is the latter form seated near a joint in a long bone that we will consider. The extreme frequency of this particular localization is to be explained by the fact that tuberculosis involves the spongy tissue, preferably in those regions which are the most vascular, that is to say the bulb of the bone and the epiphysis in children. In the adult the ends of the bones are still a seat of predilection for the process, because they are more exposed to traumatism than the diaphysis, such as pressure and traction produced by the functions of the neighboring joint. I have no intention of giving a detailed description of tuberculous lesions of the bones and I would simply recall that from the commencement, the isolated or confluent tuberculous granulations set up an intense reaction in the surrounding bony structures. In the immediate neighborhood of the focus one observes rarefying osteitis accompanied by inflammation of the medullary tissue; beyond this, and especially underneath the periosteum there is on the contrary a condensing osteitis, although the osseous neoformation never reaches the

same marked degree that it ordinarily does in chronic osteomyelitis. I have little to say regarding the advanced forms of tuberculosis of the bone. The isolated tubercle burrows out a kind of cavity and becomes encysted and thus a true, cold abscess of the bone is formed, with a purulent and more or less thick contents and a tuberculogenous membrane. If, on the contrary, a tuberculous infiltration exists there is no abscess formation, because the products of the liquifying tubercles fill the meshes of the bony tissue and results in a necrosis of the territory involved by obliteration of the vessels. The sequestrum becomes isolated little by little, its shape often being that of a heart, it is inclosed in an irregular cavity which is lined with fungosities.

What is of more interest is the evolution of intraosseous tuberculous abscesses. These increase in size more or less quickly from their periphery and finally attain the limits of the bone. It is quite true that they may also open into the medullary canal, but these cases do not concern the subject of this paper. Frequently an abscess situated in the end of a bone will invade the conjoint cartilage, ulcerating it and then the process extends to the joint, thus creating a fungous osteo-arthritis. But very frequently also the abscess may reach the surface of the bone, invade the periosteum and involve the surrounding cellular tissue. It is evident that the resulting ulceration of the bone may be on the level with a segment of the neighboring articular synovial membrane and this, by becoming infiltrated by the tuberculosis, results in the formation of an osteo-arthritis while the synovial membrane of the tendons may become somewhat involved by extension of the process. These facts are well known, but we need only recall those where the abscess having reached the surface of the bone and periosteum extends only to the cellular tissue.

The question arises why the extension should take place in one direction or another and why a cold abscess, developing in an epiphysis will extend towards the joint or towards the surface of the bone? All this we are absolutely ignorant of and one could discuss the question of the degree of resistance offered by the cartilage or the periosteum to the tuberculosis as well as the anatomical arrangement of the ends of the bone, but no absolute conclusion could be drawn. All that can be said is that the variety of tuberculosis of the bone that we are now studying has points of predilection, as we shall see, but this does not mean that osteo-arthritis is much more infrequent in these points.

However it may be, an extra-articular abscess has no distinct anatomical character. It is in the first place a mass of fungous material and then it transforms into a puriform collection enclosed within its bony envelope, but thanks to the fertility of the latter the abscess increases and extends. On the contrary this form of abscess presents certain peculiarities in its relations. It is usually seated upon one of the sides of the bone and spreads out along this; occasionally it is quite far away from the joint, but very often it is in direct connection with it. In some instances it remains on the side of the epiphysis in which it has arisen and does not extend beyond the interline; at other times it covers one entire side of the joint, hides it and is separated from the synovial membrane by the articular capsule only, but under these circumstances, it is always more developed in the end of the bone in which it took its starting point. The connections of the abscess with the soft parts have nothing special. It invades the cellular tissue and the aponeurosis, forces its way between the muscles and the tendons, or infiltrates them, or it may reach the skin, ulcerating it and this results in the formation of one or more fistulæ.

There is, however, during this evolution a fact upon which we feel inclined to insist. It is known that when in contact with the tuberculogenous membrane the tissues react and struggle for the production of fibrous tissue when it is the connective tissue system that is involved, while if the skeleton is the seat of the trouble a dense bony tissue is formed. This reaction may even result in a spontaneous complete or partial cure of the tuberculous focus, and Lannelongue believes that this mechanism explains the possible separation of a periarticular cold abscess with the original focus in the bone by fibrous transformation and atrophy of the pedicle. It is at any rate certain that the manner of continuity between the lesion of the bone and the abscess of the soft parts is extremely variable. When the abscess opens there may perhaps be no apparent communication and, if the wall is scraped and the periosteum explored with a sound it will be found intact, but if one will search with extreme care a small crack in the periosteum will oftentimes be discovered and a minute orifice will thus be detected conducting directly into the bone lesion. In other cases the opening of the abscess will at once allow one to discover either denuded bone or an ulcerative process on its surface, and one is directly led into a cavity with or without

a sequestrum or into a focus of caries. If I have somewhat insisted on these facts it is simply because they have a practical interest and I shall show the necessity of not overlooking the lesion in the bone when one is dealing with an abscess of the soft parts. Such are the principal facts concerning para-articular abscess to which we are desirous of calling attention and it now remains for us to say a few words relative to the general anatomic changes arising in the bone, the soft structures and especially the joints.

At the diseased point the bone always is somewhat increased in size, but certainly less in reality than in appearance. In point of fact this local hypertrophy is due more to a thickening and induration of the soft parts in contact with the bone, than to a hyperostosis properly speaking. I shall refer again to this question when studying the clinical aspect of the subject.

The muscles in the neighborhood are usually markedly atrophied, but contractions are not liable to occur. The lymphatic system is involved and a regional adenopathy is frequent.

The disorders are either nil or insignificant in the neighboring joint. They are, for that matter, little known anatomically and all knowledge gained of their condition is obtained during operation. It is quite possible to find the joint free of any lesion even when it is close to an extensive tuberculosis focus of the epiphysis or of a large abscess of the soft structures. It is more common to find an articular collection, which however is usually moderate in amount; the liquid is serous, nonpurulent and perfectly susceptible of becoming spontaneously absorbed under the influence of the immobility necessitated by the treatment of the affection. There are no lesions of the synovial membrane or the capsule, but it should be pointed out that the focus in the bone is occasionally situated at the point of insertion of one of the ligaments of the joint and this fact explains the pains produced by movements of the limb which distend the ligament. To sum up the changes of a joint in the neighborhood of a tuberculous focus in the epiphysis are both benign and minute during the entire formative period; as long as they do not become more accentuated these lesions are easily cured by simple immobilization, but it goes without saying that, if the focus of tuberculosis is allowed to continue its evolution and extend, it will reach the synovial membrane and open into the joint through the cartilage, thus realizing a white swelling, with fungous transformation of the synovial and a purulent collection, and will invade the other bone. It is not necessary to make any comments on the gravity of this lesion and the functional disorders which will result from it.

It is most important to consider for how long a joint may re-

main free from disease when an extra-articular tuberculous focus exists and, although nothing precise can be said, with the aid of statistics or otherwise, we feel prepared to say from personal observation that, at least in children, it may be for sometime. Thus considered in a general way, the transformation of an extra-articular tuberculosis of the bone into a frank osteo-arthritis may only occur after a considerable lapse of time, during which plenty of time is at the surgeon's disposal to treat and cure the primary affection.

Certain differences should be established according to the joints; the localization of tuberculosis in certain epiphyses almost certainly results in a participation of the joint at once. In others, on the contrary, the integrity of the joint persists for a considerable length of time; in other words an osteo-tuberculosis near a joint has certain points of predilection. All authorities appear to be quite in accord on this point. The following are three principal points of election, namely the lower end of the radius, the lower end of the fibula and the great trochanter. As has already been pointed out it is useless to search for any explanation relative to this matter. In point of fact the size of the end of the bone cannot be considered, nor the more or less considerable part that it takes in the joint, the degree of activity of its epiphysis, etc. There is a single point in common which perhaps permits one to class the lower end of the radius and fibula together in this point of view, because the cartilage of conjunction in both is markedly above the level of the joint. The great trochanter is frequently attacked by extra-articular tuberculosis, which may develop an external or posterior abscess, which makes it frequently very difficult to differentiate from coxalgia. It may be said that it is the only point of the upper end of the femur which can become invaded by tuberculosis without participation of the synovial membrane of the hip joint. The anatomical arrangement of the synovial membrane should be recalled to mind; it becomes reflected on the neck of the femur at the limit of its capsule, and envelopes it everywhere, excepting behind in the neighborhood of the trochanter. Now it is precisely this posterior aspect of the epiphysis which frequently becomes the starting point of para-articular abscesses. The localizations at the upper end of the tibia and the lower end of the femur are far more infrequent; they are met with, however, but a white swelling of the knee should be considered as usually following lesions of the neighboring epiphyses.

The olecranon has been much discussed and while Gangolphe is opposed to the idea that this bone may be involved without participation of the elbow joint, Ménard believes the contrary and

has reported a very striking example. From personal observation I am inclined to agree with the latter authority. It is usually on one of its sides, or posterior border, that the lesions in the olecranon become localized when they do not invade the joint.

Finally we come to the lower epiphysis of the humerus and the head of the radius, which are extremely infrequently involved. As regards the former, Ménard says that he has never met with this lesion in the child, but the case reported by Bonnel was a perfectly typical tuberculosis of the epicondyle. I have been unable to find any instances in which the upper end of the humerus was involved, but it cannot be said that this localization is impossible, although it must be extremely infrequent. For that matter there is not a single long bone that may not present tuberculosis in its extremity and even the metacarpals have been involved.

From this study of the localization of extra-articular tuberculosis of the bones one can simply conclude that certain joints become invaded more easily and earlier than others, but one should also recall to mind that they will always become involved if the extension of the lesions is not prevented by proper treatment. There is an anatomical fact which results from Ménard's cases, namely the irritation of the cartilage of conjunction in children, quite capable of giving rise to a growth of the skeleton after a cure has taken place.

Tuberculosis evolutes in three more or less distinct stages, but always preserving this character of the greatest importance upon which we cannot insist too much upon, namely that the neighboring joint is not involved, at least not seriously, at any epoch of this evolution. The commencement of the affection corresponds anatomically to the development of the tuberculous elements in the bony tissue of the epiphysis. Usually the process develops insidiously and quietly, its essential symptom being pain. It is extremely moderate and can hardly be said to exist spontaneously; it is quite marked after fatigue, but soon quiets down by rest. The stories told by the patients are usually about the same. It is merely by chance that his attention is called to the painful spot which he usually attributes to some slight traumatism. At all events intense spontaneous pain is rarely complained of accompanied by sudden distant radiations, which appear to characterize the lesions with invasion of the articular serosa and which, according to Lannelongue, find their rational explanation from the presence of nerve ramifications of the synovial and ligaments. A local examination shows very little, but there is one thing which merits attention, namely

a very marked decrease in the functional power of the limb and this partial impotence is not due to the pain or joint lesions as one might be led to suppose. In point of fact, it is very easy to make the diseased limb go through all its movements without provoking the slightest pain and I believe that muscular atrophy should be considered as the first sign of tuberculosis of the epiphyses. Examination of the diseased part will always show the presence of a fixed and very precise painful spot, always the same and exactly corresponding to the focus of disease. The sensitiveness awakened by even moderate pressure is either dull or quite acute, while palpation of the neighboring parts is absolutely painless.

The general condition of the patient varies extremely from one case to another. Frequently subjects having a tuberculous lesion of a bone present the group of symptoms which formerly were looked upon as belonging to scrofula and that this diathesis exists there is no doubt in my mind and I cannot too strongly uphold the teachings of Sir Dyce Duckworth when he says that there is a strumous diathesis and that those born with it are predisposed to tuberculosis lesions, although with care and proper hygiene they may never become victims to the disease.

These patients have a flushed face, thick lips and the tissues are, so to speak, infiltrated and puffy. Here and there one will find old cicatrices of fistulous tracts, more especially in the cervical region. The lymphatic system is hypertrophied. There also may exist other foci in the bones with fistulæ undergoing evolution. At other times the lesion is primary and the patient is attacked in the midst of an apparently flourishing health and in these cases there is no fever, the appetite is good and the general condition perfect.

Between this initial period during which it is most infrequent for the patient to consult the surgeon, because he pays little attention to a disturbance which in appearance is so mild, and the period which is characterized by the formation of a distinct tumefaction, there exists a more or less lengthy period of time, during which the lesion which is still deeply seated, extends. Pain becomes more acute and superficial, so to speak, although it retains the same character. Finally the tumefaction of the bone appears, but it is still limited and hard. But from this time on there is a symptom which can make its appearance—I refer to the involvement of the lymphatics of the region, which I will discuss more fully later on.

In the second stage of the disease the pain becomes constant; it is spontaneous and increases when the limb is moved. One must, however, make a few remarks relative to this. A superficial examination is sufficient to discover the true cause of the

increase of pain during movements and in all cases that we have seen we have always been able to produce extensive movements of the limb without increasing the pain and we have noted that the movement which is the cause of pain, was always the same in a given case. This fact has also been noted by Ménard, who believes that the pain is due to the lesions of the neighborhood. I believe that the limitation of movements is to be explained by the pain caused by the contraction of the muscles which take their insertion in the immediate neighborhood of the diseased bone and that no lesion of the joint need necessarily exist. Muscular atrophy is very appreciable, not merely by measurements but from simple inspection alone and from this there ensues a more or less considerable functional weakness. The tributary glands of the lymphatics coming from the region of the disease are frequently enlarged and are easily detected by palpation, but it should be remarked that lymphatic involvement is less frequent than in those cases where the synovial membrane has become involved. Locally a tumefaction will be found, but there is not a hyperostosis, properly speaking. The swelling is entirely confined to the soft parts and radiography shows this perfectly. The tumefaction which is perfectly circumscribed and hard in the beginning, shows a tendency to extend. Its contours become less distinct and at the same time it softens down. To the exploring finger it gives a pasty feel and later on in the process it softens down in the centre and becomes fluctuating. Palpation is usually painful, at least at the borders, so much so that it is occasionally quite hard to exactly determine the extent of the focus of disease and at the first examination one might be led to believe that the lesion is more extensive than it is in reality. Generally speaking it is quite easy, if one persists in the examination, to recognize what part really belongs to the bone itself. Pressure will cause an acute and persistent pain; the neighboring joint is usually free from disease, its synovial is not distended by liquid and no thickening can be felt in the *culs-de-sac*. Friction of the joint surfaces against each other is painless.

Although the knee joint should be considered particularly predisposed to a rapid involvement, most cases of extra-articular tuberculosis of the bone may be present for a considerable length of time entirely outside of the joint. It has not been positively demonstrated that these arthrites, which are extremely slight, rapidly disappearing under treatment, are of a tuberculous nature. Ollier believed that the involvement of a joint generally took place slowly and that it was usually preceded by an *arthrite de voisinage*. In point of fact the results so far obtained would seem to uphold this hypothesis.

In those cases where the disease develops in a defective soil and one already undermined by other morbid manifestations the patient's general condition will naturally be poor, but otherwise his health will be found excellent, in spite of the evolution of the local lesions. Many authorities have upheld that apyrexia is usual during the evolution of the abscess, but if care be taken a rise in the general temperature of a few tenths of a degree will be detected at some part of the day. The end of the second period culminates in suppuration of the fungous focus. The mass softens and becomes fluctuating, while the skin, which has been intact and normal in color, changes its aspect, becoming tense and shiny. It first shows a general redness which darkens and takes on a violet hue. The integuments become softened over certain areas and finally an ulcerative process takes place giving issue to the pus which has all the well-known characters of the tuberculous type, being liquid, serous and containing yellow grumous masses, small bits of bone and a few or no bacilli.

The third period is reached when the abscess is opened, but it is far from being the end of the process. The pus amounts to nothing, but the wall of the abscess is everything and remains quite as virulent after the opening of the pocket as before. The quantity of pus eliminated, discharged in considerable amount during the first few days, decreases little by little, although retaining its character, and finally fistulæ are formed. These have a narrow orifice with undermined borders and fungous granulation tissue is seen. The orifice and the tract should always be carefully explored, but I cannot insist too strongly upon the absolute aseptic technique which should be followed when doing this, because otherwise a serious secondary infection of the focus is an easy matter and will result disastrously. The location of the orifice gives no clue as to the probable seat of the lesion in the bone and one should always be guided by the data furnished by clinical examination. Sometimes the sound will at once come down upon the bone, which is denuded, but at other times it will easily enter a soft friable crepitating substance, which gives the sensation of moist sugar; at other times it will come in contact with a hard substance, which is movable and then one is dealing with the sequestrum. However, things may be entirely different and unfortunately only too often an examination with the sound will give no indication whatsoever as to the starting point of the abscess and this is occasionally a difficult matter to find during the operation even when the abscess cavity has been freely opened up.

The duration of each of the three periods of evolution of tuberculosis of the bone is essentially variable. The disease may get

well, even spontaneously in any one of its stages, but this cure is more especially observed in young subjects and then the lesion is primary and a purely local one. The happy outcome, before the formation of an abscess has taken place is certainly very infrequent and one should always remember that the supposed cure may be merely apparent and not real. The focus having become encysted may remain silent for a long time and then some day, after a traumatism or an infectious disease it will lighten up. This form of local recurrence has been described quite properly under the term of prolonged or relapsing tuberculous osteomyelitis. However, speaking in a general way, an abscess forms and the fistulæ to which it gives rise is the ultimate outcome of the process nearly always. With it come numerous complications which are special to all varieties of tuberculous lesions with fistulæ, regarding which, consequently, we will not insist.

The fistulæ are not long in becoming secondarily infected, no matter how much care may be taken in the dressings and from this fact inflammatory attacks, with ordinary frank pus, with fever and progressive loss of flesh takes place, the condition in no way preventing the tuberculous elements from undergoing their own evolution and endangering the general health. Distant lesions, such as meningitis, pleurisy, chronic peritonitis, pulmonary tuberculous only too frequently complicate the bone lesions at an advanced period of their evolution. But beside these complications, which are those belonging to all old local tuberculous processes, I would especially insist upon one which particularly interests us here, namely the possible extension of the disease to the neighboring joint, resulting in the secondary development of a white swelling. This involvement may take place either by destruction of the walls of the primary cavity in the bone, followed by an irruption of the tuberculous products into the synovial cavity following ulceration of the diarthrodial cartilage, or on the other hand it may take place in the soft structures, the tuberculogenous zone progressively changing the texture of the fibro-synovial structures from without inward. Clinically it is not possible to foresee this serious complication, but I have already pointed out that certain anatomic conditions exist which more especially expose certain joints of the body to an early contamination and for this reason it is indicated to act quickly under these circumstances.

The prognosis of tuberculosis of the bones is serious, especially when in the neighborhood of a joint and like any other tuberculous lesion the entire organism is menaced by it. And still more it is a constant danger for the joint. By a free and early treatment it is relatively easy to become master of this localized focus,

but it is infinitely less so to kill a tuberculosis which has become localized in a joint and if one obtains a cure in the latter case it is only accomplished by a mutilation which could have otherwise been avoided if the disease had been attacked earlier in its evolution. From this it naturally follows that an early and as an exact diagnosis as possible is of the highest importance.

Foci of extra-articular tuberculous osteitis are frequently associated with other manifestations of the same nature in the same subject. These patients are usually thoroughly tuberculous, or at least they are what were formerly called scrofulous and which to-day we term strumous. Under these circumstances the diagnosis presents little or no difficulty and it becomes still more certain when beside the functional and painful symptoms of the beginning of the process, the development of a tumefaction makes its appearance which, in the first place, is hard and localized, and later becoming pasty and diffused and finally fluctuating. Under these circumstances it seems to me that every effort should be made to ascertain whether the neighboring joint is involved or not, in other words whether one is dealing with a purely extra-articular tuberculous of the bone, or a frank osteo-arthritis.

I have already sufficiently insisted upon the clinical characters of these foci near the joints so that it will be now an easy matter to show their individualities.

A true osteo-arthritis from the start gives rise to rather sharp pain, which frequently takes on the character of neuralgia with shooting pains arising in the knee or heel in cases of coxalgia, while in Pott's disease they are complained of in the epigastrium. Functional impotency is complete in a very short time, the movements become limited, but in these cases this is due to the pain produced by the friction of the surfaces of the diseased bones. The defensive contracture is an early symptom which is usually wanting when the foci of disease are extra-articular. Involvement of the lymphatics of the region is usual. Finally at a more advanced period the vicious attitudes, the serious changes of the synovial membrane which is thickened and distended by liquid and fungous masses, render the diagnosis absolutely certain. There are, however, cases which give rise to considerable hesitation as to their true nature. During the evolution of an old extra-articular lesion one may observe the development of a slight arthritis in the neighboring joint, one can readily understand how difficult it would be to make a diagnosis for any one who had not observed the development of the primary lesions, and this difficulty is so real that Albert has not hesitated to propose awaiting the ultimate evolution of the lesions in order to settle the diagnosis.

The signification of the signs noted in and about the joint appear to us quite impossible to describe, but personally I consider these slight secondary arthrites as merely arthrites of neighborhood, because they get well quickly and easily, but I offer this only as an hypothesis. At any rate these are not instances of true osteo-arthritis and it is in reality the extra-articular ostitis that should be more particularly considered under the circumstances. What is true for typical osteo-arthritis is also so for the so-called atypical forms, such as the dry or partial intra-articular varieties. It can be differentiated from a pure extra-articular ostitis from the fact that from the very beginning of its evolution the articular symptoms dominate the morbid scene.

When extra-articular tuberculous ostitis is the primary manifestation of the disease in a subject free from all other tuberculous manifestations it presents considerable diagnostic difficulty. At the commencement when pain only is present, many hypotheses are possible. In the child the epiphyses are particularly exposed to this localization, so that one should above all think of tuberculosis when a fixed and tenacious pain is distinctly found at one point and let me say right here that the so-called-growing pains should always be looked upon with the utmost suspicion. Syphilis of the bones during the secondary period may give rise to pain, but this is totally different in its seat and character from that produced by tuberculosis of the bone. In syphilis the pain is nocturnal and is more apt to be seated in the body of the bone than at its ends. When tumefaction is present it is hard in the beginning and incorporated with the bone and it might be mistaken for a hyperostosis and thus lead to an error in diagnosis. In doubtful cases radiography is an excellent means of controlling the situation, because it will distinctly show that there is no increase in the size of the bone and that the tumefaction is quite independent. Osteo-tuberculosis presenting a tumefaction which cannot be separated from the bone will be more likely to be mistaken for osteomyelitis. The acute infectious types have such a startling appearance that the error is quite possible, but the same cannot be said of the sub-acute or chronic forms, or in the concealed types. However, the differential diagnosis does not usually present any very great difficulty.

The seat of the lesions is extra-articular, the pain is located at this point, it is extremely sharp and in certain cases the patients feel as if the bone was being strangulated or crushed. A true hyperostosis, either tardy or occurring at once, exists, the bone is increased in size, although not deformed. Fever will almost always be present, but it is capricious and should be watched for daily for a fortnight at least. The latter sign is, however, far

from having an absolute value and instances of chronic bipolar osteomyelitis, with enormous hyperostosis which has been taken for a sarcoma, even when the specimen was examined, underwent their evolution with absolute apyrexia. If fistulæ exist in the skin the differentiation between this disease and tuberculosis of the bone is still easier, because the fistulæ give exit to a thick and well mixed pus, containing the pathogenic bacteria, usually the staphylococcus.

Osteo-sarcoma usually arises in the epiphysees, but it presents symptoms which are sufficiently distinct to diagnose it. It is a bony tumor deforming the bone irregularly; if in the beginning it does not attack the neighboring joint it is not long in altering the bony surfaces. The malignant growth may soften down in certain points, become fluctuating and lead one to believe that a cold abscess is present which may be incised. But these difficult cases are of extreme rarity and in a large majority an erroneous diagnosis will not be made because a tuberculosis of the bone complicated with an abscess rarely presents any similarity to malignant disease.

Syphilitic gummosis osteomyelitis is an infrequent condition. The lesion usually develops in the end of the diaphysis; the bone increases in size, but there is no suppuration. Before operating it is not possible to diagnosticate tumors produced by parasites when seated in the midst of a bone, as for example an hydatid cyst or actinomycosis, and I believe also that it would be using very little clinical good sense should one wait for developments.

A simple general treatment has occasionally been sufficient to cure foci of tuberculosis in the bone, but I believe, nevertheless, that in the large majority of cases it would be most dangerous to merely resort to this simple practice. However, as it is always well to surround oneself with every security possible in conducting a treatment which of necessity is more or less long, I would advise above all to place the diseased organism in such hygienic conditions that it may advantageously struggle against the infection and help repair. Consequently one should prescribe when possible absolute rest, life in the open in the country or preferably by the sea, a substantial and well regulated diet, cod liver oil, arsenic and lactophosphate of lime, etc.

The local treatment is of the greatest importance and the ideal one would be to cut down upon the bone during the very early period of the infection when clinically the only symptom pointing to trouble is fixed, localized pain. Unfortunately it is impossible in practice to realize such conditions, because in the first place it must be admitted that the diagnosis can rarely be sure and precise at this time, above all when there is no other manifestation

of tuberculosis. And still more it would be quite difficult to make a patient accept an operation for an affection which appears to him quite insignificant and which gives rise outwardly to no alarming symptom. For this reason one will usually be obliged to merely advise absolute rest and, if necessary, to immobilize the diseased limb and possibly apply some local revulsion, all the time attentively watching the progress of the lesion.

In the larger number of cases the patients do not come under observation until a distinct tumefaction has become evident, in other words when an abscess is already forming and under these circumstances local treatment becomes obligatory. Several therapeutic means may be employed some of which are intended to produce a continuous and slow destruction of the infectious elements, the others, for the immediate radical destruction of the diseased focus. These we will rapidly pass in review. Simple puncture of the abscess, followed by injections of camphorated naphthol, a solution of iodoform in ether and so forth, have, when continued for a sufficiently long time, given good results. This treatment has resulted in the cure of the focus in the bone by arresting the progress of the tuberculosis, but in truth one should not count too much on the efficaciousness of this treatment when the bone is involved, and only too often it has not prevented the spontaneous opening of the abscess with fistulous formation.

The sclerogenous method merits more consideration and as its originator, Lannelongue, has intended, its end is the transformation of the tuberculous tissues. It endeavors to reach them without directly acting upon the neoplasm by concentrating its effects around it and on the sources of its nutrition. For this purpose one uses a solution of chloride of zinc at the strength of 10 per cent., rarely as weak as 5 per cent. An ordinary hypodermic syringe is used which is carefully rendered aseptic. The number of injections will naturally vary with the extent of the abscess three or four drops of the liquid being injected at each point. The needle should be pushed through at the periphery of the fungous focus and forced deeply into the periosteum. If the liquid should flow out of the soft parts it may lead to a necrobiotic process. The injections should be resorted to once in three weeks at least.

The happy results obtained are certain. The injections are always painful and frequently necessitate general narcosis. They give rise to considerable swelling with reddening of the skin, collateral circulation and increase of the local temperature.

I must, however, say that the treatment is so painful in many instances that the patients refuse to undergo it after it has been tried two or three times and then again I believe that one must

understand this treatment thoroughly, especially when it is necessary to inject the caustic deeply into the tissues as in the hip joint, for instance. Then, too, the injection may not attain the desired point and being deposited in the soft structures it gives rise to most unfortunate accidents. The liquid when badly directed in edematous tissues, which hide the deep bony projections and charge the anatomical relationships, may wound the sheath of a tendon, a nerve trunk or a vessel and thus bring about a true disaster. I know of a case of serious paralysis of the radial nerve following an injection of chloride of zinc in a case of arthritis of the elbow.

To sum up I believe this method is an excellent one, especially when one is dealing with extensive fungous arthrites, because when it does not cure the lesion it at least has a happy influence on the tissues and so to speak cleans them up and prepares them for a more extensive surgical operation. But in the cases which we are considering where it is necessary to suppress a menacing and invading focus of tuberculosis as quickly as possible, I am decidedly partisan of the operative method which I will now take up. To my mind the indications for operation are absolute, because the existing lesions have no tendency to get well spontaneously and if they are allowed to continue their evolution the neighboring joint will inevitably become invaded by the tuberculous infection.

As to the contraindications they practical are all to be found in the general condition of the patient. One would not naturally operate on a subject already cachectic, suffering from an advanced pulmonary tuberculosis, or any other visceral manifestation of the disease, or when patients present symptoms of visceral degeneration resulting from a long continued suppurative process. In these subjects the progress of the lesions may be limited by the injection method, while at the same time their general health is attended to by a proper treatment. The multiplicity of the localizations is not a contra-indication when no serious visceral change exists.

The open method seems consequently to my mind the one of choice because it alone can result in a durable cure. It cannot be a question here of resection or arthrectomy and all efforts should be directed above all to avoid the neighboring joint which is healthy, but nevertheless the operation should be as extensive as possible. When an abscess exists without fistula and the joint is absolutely healthy, the abscess should be freely opened up, the incision extending considerably beyond the presumed focus in the bone. The walls of the abscess should then be resected as far as possible and the remainder carefully curetted. The fungosities

should be followed up with care, often as far as the surface of the fibro-synovial layer which they cover over or may even involve without perforating them, on the aponeuroses of insertion of the muscles and in the cellular interstices of the muscles themselves. Many failures observed after an operation are due to the fact that the focus in the bone has not been looked for sufficiently and in truth it is not always an easy matter to find the small fungous orifice leading down on to the diseased bone, while the latter is far from always presenting a denuded condition rendering it easily recognizable. Consequently rather than to expose oneself to an unsuccessful operation resulting from an incomplete intervention, I believe that in doubtful cases one should never hesitate to cut through the soft parts down the bone, being guided by the exact site of the initial painful point discovered clinically when examining the patient.

When the focus in the bone has been found it should be carefully chiselled out far beyond its limits, until one finds healthy bone everywhere. The cavity should next be cauterized with a five per cent. solution of chloride of zinc, carefully avoiding any structures which might suffer from its contact. The cavity in the bone is then packed with iodoform gauze and should be allowed to remain freely accessible, the rest of the wound being brought together by several silkworm sutures. The limb should then be immobilized and the proper dressings applied over all.

In cases of old fistula, with or without a slight arthritis, the conduct to be followed is the same. The existing arthritis is far from being a contra-indication. In making the incision one should follow the indications furnished by the fistula or fistulæ, as well as by the direction taken by the probe. It should be free in order to expose the lesions which are often very extensive, far more so than one generally supposes. The fistulous tracts should be excised, the fungous foci and their diveticulæ should be thoroughly scraped, the focus in the bone chiselled out or curetted and the sequestra removed. The cavity in the bone, which is frequently very considerable, burrowing into the structures of the epiphysis, should be carefully explored so as to leave no suspicious tissue behind. The operation is finished as already indicated, namely cauterization with chloride of zinc solution and packing with iodoform gauze. However, in the cases we are now considering the wound should be left freely open and simply packed, because the old fistulous tracts are usually secondarily infected. The arthritis should be treated by absolute immobilization with a plaster cast, care being taken to place the limb in the proper position.

The results are usually simple and perfect if the operation has

been sufficiently extensive. The pain rapidly disappears while citratization takes place slowly, yet thoroughly, under the influence of the dressings, which should be changed as rarely as possible and in simple cases the limb will recover an absolute integrity of function. In the other cases, which are more extensive and of longer duration, some stiffness may remain for a certain time after the operation, but the joint lesions will disappear little by little and finally complete recovery takes place.

A CASE OF CHRONIC ECZEMA INVOLVING THE ENTIRE SKIN SURFACE.

Read at the Annual Meeting of the District Branch of the New York Medical Association, Saratoga, N. Y.

By H. W. CAREY, M. D.,

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The case here reported is of interest, first, because it is unusual to find eczema affecting all the skin surface and second because of the complications and sequelae which have developed during its course. The patient was seen in consultation in December, 1904 with Dr. H. S. Hart, of Cambridge, N. Y., to whom I am indebted for many of the points in the history, which is as follows:

P. J. M. aet, 17; occupation, farmer; complains of a scaly eruption. *Family history.* Father alive and well. Gives a history of having had a skin disease which lasted several months, situated over the back and on the legs, marked by itching and profuse scaling. Mother is alive and well. There were thirteen children in the family, one of which died of measles; the rest are well.

Personal History. The patient has had measles but does not remember ever having had any of the other diseases of childhood. Up to six years of age was subject to fits, during which he would fall to the floor unconscious and lose control of his arms and legs, and on one occasion he fell against the stove, badly burning his hands. Has never had typhoid, pneumonia or rheumatism. He has never noticed any increased irritability of the skin.

Present Illness. Began on May 30th, 1904. The first thing the patient noticed was an itching on the chest due to the forma-

tion of papules capped with vesicles. The papules were erythematous and about the size of a pea. On the following day the vesicles ruptured and the intervening skin became erythematous. The line of demarcation between the affected and normal skin was well defined. More and more skin was involved each day, the vesicles becoming larger until they reached the size of a cent. The whole chest and abdomen were covered at the end of a week. During the second week the disease spread to the back, completely covering it with vesicles and bullae. Meanwhile the chest and abdomen no longer showed the formation of vesicles for they had all ruptured leaving the deeper layers of the skin exposed and exuded freely a cloudy, serous fluid which rendered the underclothing stiff when dry. Soon after this the right and then the left arm were attacked. On the right arm the first lesion was an isolated scaly patch the size of a quarter. Vesicles developed after the scale was removed and from this focus vesicles spread over the whole arm. On the left side the eruption spread from the back over the arm. The face and head were not involved until six to eight weeks after the onset, but the vesicles here were much smaller. The whole face and head were covered with vesicles in three days. About this time the vesicles began to form on the legs, extending always from the diseased skin of the abdomen, never from isolated patches. After extending as far as the knee the legs below began to swell, became very tense, shiny and white looking. The oedema disappeared after two weeks and the vesicles extended downward from the knee until the legs even to the soles of the feet were covered with them. In the popliteal space and soles the vesicles were much larger than elsewhere, some as large as a half dollar. At this time, (September first) there was not a particle of normal skin to be found, the vesicles had all ruptured, the upper layers of the skin were destroyed, leaving the deeper layers exposed to the air. The exudation was profuse, cloudy, serous in character, necessitating a change of clothing four times a day. The skin was hypersensitive so that it was almost impossible to apply an ointment. There was a sudden rise of temperature at this time, reaching 104 to 105 degrees but this rapidly disappeared; there were no chill and no vomiting.

Scales soon began to form over the whole body, beginning on the chest. From the first the scales were large, irregular

and in some places, particularly over the abdomen, dry. When the scales are elevated the skin is moist and in some places there is exudate beneath the scales.

In October the hair began to fall out from the scalp and the exudation was very marked. In December the axillary and pubic hairs and the eyebrows and eyelashes were entirely gone. The nails were lost in January, 1905, and before this showed trophic changes by soft transverse lines of yellowish color and the matrix beneath the nail became white. Since the skin about the eyes has been affected there has been a discharge from the eyes and they have been very red at times. He is unable to read, because the letters are blurred. There has also been a purulent discharge from the external auditory canal and umbilicus. The subjective symptoms are not marked, there is some itching about the face and a feeling as though the skin were too small for him about the knees and in the instep.

Physical examination. The lips and mucous membranes are of fairly good color, there is some scaling on the lips but the tongue and mucosa lining the cheeks are normal. There is a seropurulent discharge from the eyes, the conjunctival and corneal epithelia are swollen. The head and face are of a bright red color, the hair on the head is scanty and is firmly plastered to the scalp. The eyelashes and eyebrows have almost entirely disappeared. Upon the reddened and inflamed skin are large numbers of scales, of irregular size and shape; they are sometimes one-half centimeter long, and are generally soft, due to exudation. The scales are much less about the chin and are smaller in size here.

In the axillae, on the elbow and on the backs of the hands the scales are much smaller, but they are thicker and have a brownish color. The finger-nails are brittle, fissured, and show transverse striations of yellowish color. No exudation is seen beneath the scales although the skin is moist. Over the chest the scales are large and fairly dry, but over the abdomen there is considerable exudation. The legs are completely covered with the lesions; over the thighs and legs the skin is intensely red and covered with large scales, some of which are two by one centimeters in size. About the front of the knee and the sole of the foot they are smaller and much thicker. After removing the scales the skin nowhere seems infiltrated and can be easily pinched up between the fingers, on the legs it seems atrophic.

To Illustrate Dr. Carey's Article on "A Case of Chronic Eczema
Involving the Entire Skin Surface."

Albany Medical Annals, August, 1905.



The normal folds in the skin are not obliterated. There is some difficulty in moving the mouth if the scales dry. The knees and elbows are flexed somewhat and can only be straightened with difficulty. There is no ectropion.

The lungs are clear on auscultation and percussion. The cardiac dullness is not increased and the apex beat is not displaced. There is a soft systolic murmur at the apex transmitted six centimeters to the left, the pulmonary second is accentuated, the abdomen is soft, there is no enlargement of the spleen. The temperature chart shows a daily elevation at 4 p. m. to 100 or 101 degrees. The pulse is soft, irregular and rapid, varying between 120 and 130. The respirations are twenty to thirty. Examination of the blood showed a distinct increase in the eosinophiles (seven per cent.). The urine is free from albumin.

When the patient was first seen in December there was a universal enlargement of the lymphatic glands but at the present time they are normal in size.

In summarizing it may be said that we have here an acute disease of the skin in which the sequence of events is (1) erythema, (2) papule, (3) vesicle, (4) exudation, (5) scaling. Itching is a prominent symptom. The lesions are diffuse, there is no tendency to group. From the primary focus on the chest the eruption has spread over the entire skin.

The secondary lesions are (1) general alopecia, (2) loss of nails, (3) conjunctivitis, (4) cicatricial contractures of skin, at elbows and knees.

The constitutional symptoms are (1) daily rise in temperature, (2) cardiac muscular insufficiency and rapid pulse.

When the eruption first developed the diagnosis of ivy-poisoning was made by the physician in attendance at that time, and according to the statement of the patient "poison-ivy" was given internally (tincture of *rhus toxicodendron*) for a period of six to eight weeks, just in what strength however, cannot be determined. This is of interest with regard to the unmistakable evidences of nephritis which developed about two months after the onset. That it probably was not a case of ivy poisoning in the first place is proven by the fact that the patient is sure he was not exposed to contact with the plant, that his skin was not susceptible to the plant inasmuch as he had often handled the leaves without result and that the eruption began on the

chest yet was never carried to other parts of the skin by the hands or arms which necessarily would have come in contact with the poison.

As the origin of the nephritis there are three possibilities open, first as a result of a too prolonged administration of the rhus toxicodendron; second, an acute infection; third, result of the eczema.

In studying the effect of toxicodendrol, the active principle of the poison ivy plant,¹ Pfaff states that its action when given internally in rabbits is that of a strong irritant which affects particularly the kidneys, causing a suppression of urine or an albuminuria. It closely resembles cantharides in its action and is classed with this drug. (Cushny).

Acute infection is excluded by the brief duration and want of symptoms and signs which accompany such infections of the kidney.

Eczema rarely causes a nephritis but this undoubtedly does occur. Six such cases have been reported by Bruhns in three of which no medication had been used and in the others only (indifferent) ointments.

Nephritis occurring in eczema does not seem to depend upon a retention of the normal secretions of the skin as shown by the experiments of Senator in which the skin surface was covered by impermeable materials. It must depend rather upon the formation of toxic substances in the skin or substances which when absorbed are changed to toxins in the internal organs. Bardeen² has suggested the formation of such substances in the skin to explain the effect of superficial burns.

To determine exactly to which one of these three possible causes the nephritis in this case was due is not possible but it is significant that shortly after the onset of the oedema the internal administration of the Rhus Toxicodendron was discontinued and the oedema promptly subsided and although the disease of the skin continued with as much or even more severity than at first the urine has remained free from albumin.

¹ *Journal of Experimental Medicine*. Vol. II, 181.

² BARDEEN, *ibid*.

Editorial

There are one or two elementary rules to be observed in the way of handling patients, he remarked. * * * The most obvious is that you must never let them see that you want them. It should be pure condescension on your part seeing them at all; and the more difficulties you throw in the way of it the more they think of it. Break your patients in early and keep them well to heel. Never make the fatal mistake of being polite to them. Many foolish young men fall into the habit, and are ruined in consequence.

A. CONAN DOYLE.

The Stark-Monro Letters.

Dr. John H. Pryor, who was appointed to the **A Voice from the Wilderness** medical superintendency of the New York State Hospital for Tuberculosis, when that institution was opened for patients in the Adirondacks a few years ago, has resigned. The reason for this action, as stated by Dr. Pryor, amounts to an allegation that medical principles and fiscal methods are incompatible. The following announcement of the embarrassments which he has met is made by Dr. Pryor:

I resigned last March, but no action whatever was taken on my resignation, and I have now asked to be relieved immediately. My reasons for resigning are that I am tired of the shackles involved in State institutional work as it is at present carried on in New York. There is infinitely too much red tape, which has grown in the course of years and has been supplied largely by clerks. I am tired of the vicious centralization of power in the hands of one man, such as is possessed by the fiscal supervisor, H. H. Bender. I am tired of being associated with a board of trustees of a State institution who no longer legislate, but merely meet and act as figureheads. Only Dickens could properly appreciate the humor presented by the situation.

I am disgusted—and I measure my words when I say disgusted—with the results of the civil service as administered in this State. The Civil Service Commission, or rather its clerks, seems able to furnish me with everything I do not want and nothing I do want in the way of assistants. I do not hesitate in saying that the time is past when a superintendent of a State institution in New York State can feel that the direction of the institution is in reality in his hands, and the time is approaching rapidly when no physician of any professional standing will accept a position in a State institution.

It must be assumed that I was selected to fill the position I have held in this institution on account of my knowledge of tuberculosis and its treatment, but my work here has been work that required peculiar executive ability rather than medical knowledge. The building, the State sanatorium here, is really a barracks, according to the confession of the men who designed it. It is a botch architecturally and has been criticized

severely by qualified judges who have visited it from similar institutions from all the states of the union. Yet it is admitted by all authorities on the matter that this sanatorium leads when its age is taken into consideration—first in the number of curable cases treated and, second, in the results obtained.

After a short rest it is my intention to write a series of articles on the methods used in conducting a State sanatorium. I will give actual facts, and they are certainly such as to astonish the outside public. These facts must be known. They should have been exposed by the State Board of Charities, but that honorable body indulges principally in garrulity and in liberal promises that it will do something some day.

There should be 120 patients in this sanatorium, but with the present appropriation the only way in which it is possible to provide for more than 100 patients is by actually reducing the food supply of each inmate. When I have been required to take more patients than maintenance was provided for, I was advised to, as it was expressed, put the matter up to Mr. Bender and he would be obliged to allow necessary expenses, even if they would create a deficit in his department. But H. H. Bender had refused to allow \$1,000 that was absolutely required for maintenance, and it became plain that fourteen patients who had not yet recovered would have to be discharged. This may be taken as an illustration of the economy boasted of by Mr. Bender. At the present time 175 patients could be accommodated here with ample room, and the only added expense would be the additional food required and the services of a few more waitresses.

The present management of the Raybrook institution, as administered at Albany and not at Raybrook, is a laughable exhibition. It is only fair to say, and I have pleasure in speaking of it, that politics has been connected in no way with the institution. No politician has endeavored to inject it here, either by using influence to place patients in the house or in any other way. Governor Higgins has done his utmost to forward my work and my relations with him have been most pleasant.

The New York *Sun* makes the following comment on the appearance of the hospital after Dr. Pryor's departure:

It looks very much as if a cyclone had recently struck it. For furnishings of the nine rooms occupied by the superintendent there are one small rug, one bureau and one stand. The State is supposed to provide furnished apartments. The walls throughout the house are bare, there are no medical books in the library and the very microscope with which the examination of sputum is made is Dr. Pryor's personal property and has been left by him because the institution has no other. The billiard table and piano, which afford almost the only recreation possible to the patients, still remain. They were obtained by Dr. Pryor from friends in Buffalo.

The late Dr. Benjamin F. Sherman, of Ogdensburg, N. Y., after fifty years of professional activity, said that he had never

known dishonesty in any institution under the control of a doctor. It appears to be difficult for State officials to understand that medical men and political jobbers are not in the same class, and that physicians will not scramble for the relatively few medical positions of the State at the sacrifice of the principles which underlie their professional training.

Scientific Review

EXPERIMENTAL UROGENITAL TUBERCULOSIS AND THE RESULTS OF UROGENITAL TUBERCULOSIS IN MAN.

1. Ueber die Ausbreitung und Entstehungsweise der männlichen Urogenitaltuberculose.

KRAEMER, *Deutsche Zeitschrift für Chirurgie*,

Bd. 69, 1903, page 318.

2. Recherches experimentales sur la tuberculose genito-urinaire, surtout sur la tuberculose du rein.

Annales des Maladies des Organes Genito-Urinaires,

Vol. 21, 1903, page 1.

3. Experimente in Körper. über die Ausbreitung der weiblichen Genitaltuberculose in Körper.

BAUMGARTEN, *Berliner klinische Wochenschrift* No. 42, 1904, page 1097.

The three papers from which this review is taken cover thoroughly the subject of experimental urogenital tuberculosis and the results are practically uniform. The mode of its extension, especially as regards ascending renal or tubal infection and descending infection of the testicle, has been hitherto undetermined experimentally so that these results put the subject on a fairly firm basis.

Rabbits were used almost exclusively in the experiments. Baumgarten and Kraemer used bovine tubercle bacilli in cultures or in the form of macerated tissue, Hansen used avian tubercle bacilli.

Of the earlier experiments reference is made to those of Vigneron in which one hundred guinea-pigs were inoculated successfully with tuberculosis without once producing a renal tuberculosis. Efforts to produce a haematogenous renal infection by the injection of tubercle bacilli directly into the circulation were successfully made by Borrel, Laroche and Friedrich. The

subcutaneous inoculation with trauma to the kidney was successful in only one of eleven cases (Hallé, Hansen).

By ligating the ureter after subcutaneous inoculation Hansen produced miliary tubercles and ulcerations in the kidney with pyonephrosis in one of four rabbits; one similar experiment (Vignerón) in which the tubercle bacilli were inoculated into the ear vein was negative. In seven rabbits Hansen introduced the tubercle bacilli into the trachea with positive result in four. Miliary tubercles, ulcerations, caseation and pyonephrosis developed in from three to eight months afterward. The lesions extended into the pelvis of the kidney and ureter in all but one case. The bladder and all the remaining urogenital organs were uninvolved.

EXPERIMENTAL DESCENDING GENITAL TUBERCULOSIS FROM THE KIDNEY.

Sixteen rabbits were inoculated through a lumbar incision with the production of a renal tuberculosis in five. In the first three of these a tuberculosis of the pelvic and ureteral mucosa developed in the form of typical miliary tubercles with the characteristic histological structure. The prostatic utricle was infected in two animals, the prostate in one and the epididymis in one. In the fourth and fifth rabbits the procedure was altered somewhat. After the renal lesions had existed for two months, a temporary retention was produced by ligating the urethra for twenty-four hours. In both animals extensive tuberculosis developed in the prostatic utricle and prostate, and in one tuberculosis of the posterior urethra and right testicle.

EXPERIMENTAL ASCENDING RENAL TUBERCULOSIS.

Efforts to produce a haematogenous infection of the bladder by subcutaneous inoculation and subsequent injury to the bladder mucosa by catheter were not successful.

Six rabbits were inoculated directly into the bladder and the mucosa injured by catheter or stylet. Later an artificial retention was produced by ligation of the urethra for twenty-four hours. Two animals failed to survive the operations but in the remaining four a tuberculous cystitis was found in each, the prostatic utricle and prostate was also involved but no specific lesions were found in the ureters or kidneys. Of four animals inoculated in the ureter with tubercle bacilli with ligature below, only one developed a renal tuberculosis.

EXPERIMENTAL TUBERCULOSIS OF THE TESTICLE.

Four animals were inoculated in the vas deferens near the epididymis. In all a tuberculosis of the testicle and epididymis developed. The infection extended upward in each case to the utricle of the prostate and in one case the gland itself was involved. The kidneys, ureters and bladder were not infected. No tubercle bacilli were found in the urine.

Baumgarten experimented exclusively with female rabbits. He injected the urogenital tract directly with tubercle bacilli as follows:

- Into the (a) lower vaginal segment,
- (b) upper vaginal segment,
- (c) cornua uteri,
- (d) peritoneum.

Inoculation of the lower vaginal segment caused lesions of tuberculosis which never extended upward beyond the circular fold of mucous membrane which forms the line of demarcation between the upper and lower segments. The orifice of the urethra was regularly involved in infections of this segment. Infections of the upper vaginal segment always remained localized, never extending upward into the uterus or downward into the lower segment. Inoculation of one of the cornua uteri, as near the origin of the tube as possible, never resulted in an ascending infection of the tube or a crossed infection of opposite cornua. The infection always extended downward to involve the upper vaginal segment.

Infection of the peritoneum never extended into the tube. Baumgarten explains this as due to the alteration in the peritoneal current, resulting from the degenerative changes in the endothelium. The fimbria also become adherent and obliterate the opening into the tubes.

From the results of the foregoing experiments it is seen that tuberculous urogenital infections extend always in the direction of the current of physiological secretion. The extension from a renal tuberculosis is always toward the bladder, etc., and never in the opposite direction. In the experimental production of an hematogenous renal tuberculosis, tubercle bacilli are almost constantly found in the urine yet trauma or retention is necessary before infection takes place. The extension may take place in two ways either by implantation as in renal tuberculosis with a subsequent cystitis or *in continuo* as in lesions of

the ureter from lesions in the kidney. Extension by implantation is always in the direction of the current of physiologic secretion, extension *in continuo* might theoretically cause an ascending renal infection yet it was never observed in the experiments here recorded and is denied by Kraemer.

In descending urogenital infections the prostate is most frequently involved, the ureter and the bladder remaining normal and the lesions are confined almost exclusively to the glandular tissue therefore originating by implantation from the prostatic ducts. In order to apply the results of animal experimentation to human pathology, practically the same anatomic and physiologic conditions must prevail. The principal difference here is in the increased length and width of the ureter and vas deferens in man and the slower current of secretion in the vas deferens. The infecting agent being the same Kraemer therefore applied these conclusions directly to human pathology.

The almost constant seat of tuberculosis lesions in the epididymis argues apparently for a descending infection along the vas deferens but as already pointed out such an extension must necessarily be against the current and therefore could only take place by the apposition of one tubercle on another. The usual location of gonorrheal infections in the epididymis as a result of extension along the vas deferens is a conspicuous example of the extension of an infection against the current but Kraemer points out that the essential difference between gonorrheal and tuberculous extension is that in the former the gonococci multiply in the muco-purulent discharge on the mucous membrane.

Finally in explaining the case of

- (a) apparent extension against the current of secretion,
- (b) double renal or double testicular tuberculosis,
- (c) unilateral renal and testicular tuberculosis,

two etiological factors must be borne in mind, hæmatogenous and congenital infection.

Hæmatogenous infections of the urogenital tract in man are most common, tubercles are frequently found on the walls of the blood vessels of the kidney, in the glomeruli and in eight cases Meyer found tubercle bacilli in the kidney without lesions. More recently tubercle bacilli have been found in the urine of patients with pulmonary tuberculosis. This as Kraemer claims is practically an excretion of tubercle bacilli by the kidney.

In the testicle also tubercle bacilli have been found within the testicles in the absence of specific lesions. An injury to the kidney, testicle or epididymis under these conditions would result almost certainly in an infection.

The infection of one testicle from the other is common and in these cases the extension is through the septum either directly or through the lymphatics. The vas deferens is usually intact.

In other diseases, particularly those of acute character, *e. g.*, mumps, variola, typhoid and miliary tuberculosis, the testicle is more often affected than the epididymis, whereas the latter is generally attacked in chronic diseases, *e. g.*, syphilis, lepra and tuberculosis, and specially if there is scar tissue or the results of former inflammation in the epididymis.

The cases of simultaneous tuberculosis of the kidney and testicle on the same side in children could be readily explained by assuming a focus of congenital tuberculosis in the Wolffian body. That such foci might become latent and later rendered active by injury is apparent.

HARRY W. CAREY.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, JUNE, 1905.

Deaths

	1901	1902	1903	1904	1905
Consumption	23	13	12	19	15
Typhoid fever	3	2	0	2	1
Scarlet fever	1	0	0	0	0
Measles	0	0	2	0	2
Whooping-cough	0	0	2	0	0
Diphtheria and croup	0	0	2	0	2
Grippe	0	0	2	0	1
Pneumonia	2	3	4	4	2
Broncho-pneumonia	3	4	3	2	2
Bright's Disease	12	5	10	19	14
Apoplexy	12	8	5	5	5
Cancer	13	6	9	12	8
Accidents and Violence.....	8	6	7	8	7
Seventy years and over.....	19	19	15	18	18
Deaths under one year.....	14	13	17	10	13
Total deaths	148	102	119	118	109
Death rate	17.99	12.40	14.47	14.34	11.93
Death rate less non-resi- dents				12.77	10.51

Deaths in Institutions.

	1902		1903		1904		1905	
	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent
Albany Hospital	11	4	6	4	12	7	3	6
Albany County Jail	0	0	0	0	0	0	0	1
Albany Orphan Asylum	0	0	0	0	0	0	1	0
County House	1	1	0	5	2	2	1	0
Homeopathic Hospital	2	2	2	1	0	2	2	1
Hospital for Incurables.....	1	1	0	0	0	0	0	0
House of Good Shepherd.....	0	0	0	0	0	0	1	0
House of Shelter.....	0	0	1	0	0	0	0	0
Home of the Friendless.....	0	0	0	0	0	0	1	1
Little Sisters of the Poor.....	0	0	1	0	1	0	0	0
Public Places	0	1	0	0	3	0	1	2
St. Francis de Sales Orphan Asylum	0	0	3	0	0	0	0	0
St. Margaret's Home.....	3	1	0	0	0	0	2	0
St. Peter's Hospital.....	1	2	0	0	2	2	4	2
St. Vincent's Male Orphan Asy- lum	0	0	0	0	0	0	0	0
Marriages	103							
Births at term.....	94							
Still births	9							
Premature births	5							
Total	201							

PLUMBING INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation, there were 324 inspections, of which 213 were of old buildings and 111 of new buildings. Fifty-seven iron drains inspected, thirty connections with street sewers, forty-one tile drains, fifty cesspools, seventy-six wash basins, seventy-seven sinks, sixty-four bath tubs, fifty-five wash trays, four trap hoppers in yard, 116 tank closets. One hundred and eighty permits were issued, of which 135 were for plumbing and forty-six of building. There were twenty-six plans submitted, and twelve of them were for old buildings and fourteen for new buildings. Nine houses were tested on complaint, three with blue, red and six with peppermint, and there were fourteen water tests made. Thirty-six houses were examined on complaint and fifty reinspections were made. Twenty-one complaints were found valid and fifteen without cause.

There were sixty-two mercantile certificates issued to children and twenty-four factory certificates issued to children.

BUREAU OF CONTAGIOUS DISEASES

Cases Reported

	1901	1902	1903	1904	1905
Typhoid Fever	2	4	2	4	4
Scarlet Fever	8	14	5	26	6
Diphtheria and Croup.....	27	22	11	7	17
Chickenpox	3	38	4	1	1
Measles	58	25	118	6	32
Whooping-cough	0	0	0	0	3
Consumption	1	1	1	1	0
Total	99	104	141	45	63

CONTAGIOUS DISEASES IN RELATION TO PUBLIC SCHOOLS

Reported	D.	S. F.
School No. 6.....	1	..
School No. 13.....	1	..
School No. 14.....	..	1
St. Joseph's Academy.....	1	1
Number of days quarantine for diphtheria:		
Longest..... 23	Shortest..... 8	Average..... 15 2-7
Number of days quarantine for scarlet fever:		
Longest..... 38	Shortest..... 11	Average..... 27 4-7
Fumigations:		
Houses	19	Rooms 42

ANTITOXIN

Cases of diphtheria reported.....	17
Cases of diphtheria in which antitoxin was used.....	16
Cases in which antitoxin was not used.....	1
Deaths after use of antitoxin.....	1

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR JUNE, 1905.—Number of new cases, 91; *Classified as follows*: dispensary patients receiving home care, 1; district cases reported by health physicians, 7; charity cases reported by other physicians, 32; patients of limited means, 51; old cases still under treatment, 42; total number of patients under nursing care during the month, 133. *Classification of diseases* (new cases): medical, 20; surgical, 8; gynecological, 4; obstetrical work of the Guild, 27 mothers and 27 infants under professional care; dental, 2; skin, 2; throat and nose, 1; 1 contagious disease in medical list, removed to hospital, 1; deaths, 4:

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; attending obstetricians, 1; medical students in attendance, 3;

Guild nurses, 5; cases, 2; number of visits of head obstetrician, 10; by attending obstetricians, 3; by the medical students, 12; by the Guild nurses, 19; total number of visits for this department, 44.

Visits of Guild Nurses (all departments): number of visits with nursing treatment, 874; for professional supervision of convalescents, 233; total number of visits, 1,107. Five graduate nurses and six assistant nurses were on duty. Cases were reported to the Guild by three of the health physicians and by 25 other physicians and by two dentists.

EXAMINATION FOR PHYSICIANS IN NEW YORK STATE CIVIL SERVICE.—Open competitive examinations will be held in various cities throughout the State August 19, 1905, for the following position:

Sixth Grade Physician.—This examination is intended to provide eligibles for the position of Junior Physician and other medical positions of similar grade in the State hospitals and other State and county institutions. The usual salary is \$900, increasing \$100 each year to \$1,200, with maintenance, including quarters, board, laundry, etc. From the eligible list resulting from this examination it is expected that certification will be made for the position of physician at the Rome State Custodial Asylum, salary \$1,200 to \$1,500 and maintenance. It is open only to men who are licensed medical practitioners in this State who have graduated within five years from a registered medical school and who have had since graduation one year's experience on the resident medical staff of a general hospital or as medical interne or clinical assistant in a State hospital or institution or have been engaged for three consecutive years in the practise of medicine. Subjects of examination and relative weights: Written examination covering anatomy, physiology, chemistry, materia medica, therapeutics, obstetrics, surgery, theory and practise, 7; education, experience and personal qualifications, 3.

In order to be eligible for appointment, candidates must obtain a minimum standing of 60 per cent. on the written examination and 60 per cent. on education, etc., and a general average of 75 per cent.

Candidates for positions in homeopathic State hospitals will be admitted to the examination without regard to date of graduation.

The medical service of the State comprises the 16 State hospitals, with about 160 salaried medical positions, and about 30 positions in the Pathological Institute, the Craig Colony for Epileptics and other institutions. All higher medical positions, from assistant physicians at \$1,200 to \$1,500 and maintenance, to superintendents at \$3,500 to \$4,500 and maintenance, are filled by promotion through regular grades from that of the sixth grade or junior physician. The State service presents one of the very best opportunities not only for training in psychiatry, but for general and special medical, surgical, laboratory and post mortem work as well.

Persons desiring to enter these examinations must execute applications on forms supplied by the Commission and file them in the office of the Commission before noon of August 14th. Application blanks and further information regarding the character of the service and the nature of the examinations required may be obtained by personal or written application to any of the following:

Utica State Hospital, Utica, N. Y. Dr. H. L. Palmer, Superintendent.

Willard State Hospital, Willard, N. Y. Dr. R. M. Elliott, Superintendent.

Hudson River State Hospital, Poughkeepsie, N. Y. Dr. Charles W. Pilgrim, Superintendent.

Middletown State Homeopathic Hospital, Middletown, N. Y. Dr. Maurice C. Ashley, Superintendent.

Buffalo State Hospital, Buffalo, N. Y. Dr. Arthur W. Hurd, Superintendent.

Binghamton State Hospital, Binghamton, N. Y. Dr. Charles G. Wagner, Superintendent.

St. Lawrence State Hospital, Ogdensburg, N. Y. Dr. R. H. Hutchings, Superintendent.

Rochester State Hospital, Rochester, N. Y. Dr. E. H. Howard, Superintendent.

Long Island State Hospital, Flatbush, Brooklyn, N. Y. Dr. O. M. Dewing, Superintendent.

Kings Park State Hospital, Kings Park, L. I., N. Y. Dr. Wm. Austin Macy, Superintendent.

Manhattan State Hospital, Ward's Island, New York, N. Y. Dr. E. C. Dent, Superintendent.

Central Islip State Hospital, Central Islip, Long Island, N. Y. Dr. G. A. Smith, Superintendent.

Gowanda State Homeopathic Hospital, Gowanda, N. Y. Dr. D. H. Arthur, Superintendent.

Matteawan State Hospital, Fishkill Landing, N. Y. Dr. R. B. Lamb, Superintendent.

Dannemora State Hospital, Dannemora, N. Y. Dr. C. H. North, Superintendent.

Pathological Institute, Ward's Island, New York, N. Y. Dr. Adolf Meyer, Director.

Institution for Feeble-Minded Children, Syracuse, N. Y. Dr. J. C. Carson, Superintendent.

State Custodial Asylum, Rome, N. Y. Dr. Charles Bernstein, Superintendent.

Craig Colony, Sonyea, N. Y. Dr. W. P. Spratling, Superintendent.

Or to the

CHIEF EXAMINER,

State Civil Service Commission, Albany, N. Y.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.—Anticipating that a large number of American physicians will attend the Fifteenth International Medical Congress, to be held in Lisbon, Portugal, April 19 to 26, 1906, the undersigned have completed arrangements for the chartering of a first class vessel upon which the American delegation may sail as one party. In this way better accommodations can be secured at a more reasonable price, the social features of the trip will be enhanced, and each individual surrounded by those who are personally congenial.

Additional security, and consequently added pleasure will be obtained as the party will be in charge of a traveling conductor who is thoroughly

conversant with the language and the customs of the countries to be visited enroute.

As there will doubtless be some diversion as to the choice of the routes, depending on individual inclination and previous opportunities for foreign travel, a number of returning routes have been selected, the itineraries of which, although separate from the journey proper, have been arranged so that the principal points may be visited together. Those who desire may include a Mediterranean excursion, Madrid, Corunna, Vigo, Aport, the Escorial, Toledo, Seville and Cordova may be visited, as well as an opportunity to return leisurely through Italy, France and Great Britain.

Hotel reservations for the party have also been arranged for in the best hosteries of Lisbon, and in addition a number of "floating hotels" will be anchored in the Tagus during the entire session of the congress, thus enabling visitors who desire, to enjoy all the comforts of a superb hotel system on the water.

Round trip rates from New York, will run from \$275 up, according to the tour selected, including all expenses.

Itineraries of the various tours are being prepared and will soon be ready for distribution. It is important that all who contemplate taking this trip should register at once, so that no disappointment in hotel reservation may be experienced. The final arrangements will, as heretofore, be in the hands of the well known conductors, Thos. Cook & Sons, which insures perfect and complete service for the trip, and relieving the passenger from all annoying details incident to the voyage. Those delegates who attended the last Congress in Madrid, sailing from New York on the "Princess Irene" will remember the excellent service afforded them.

Dr. John H. Musser, Philadelphia, is chairman of the National American Committee, and Dr. Ramon Guiteras, 75 West 55th Street, New York City, is the secretary, to who all applications for membership and communications in regard to the presentation of papers should be addressed.

Further information, reservations, and copies of itinerary may be obtained by addressing: Lewis S. McMurtry, M. D., Louisville; Nicholas Senn, M. D., Chicago; J. D. Griffith, M. D., Kansas City, Mo.; W. F. Southard, M. D., San Francisco; Frank P. Norbury, M. D., Jacksonville, Ill.; W. T. Corlett, M. D., Cleveland, O.; C. H. Hughes, M. D., St. Louis, Mo.; R. T. Morris, M. D., New York City; A. Vander Veer, M. D., Albany, N. Y.; Jos. M. Mathews, M. D., Louisville; J. B. Murphy, M. D., Chicago; Jas. E. Moore, M. D., Minneapolis, Minn.; Chas. Wood Fassett, Krug Park Place, St. Joseph, Mo.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.—The annual meeting of this organization will occur on Thursday and Friday, August 24 and 25, in the city of Council Bluffs, under the presidency of Dr. S. Grover Burnett, of Kansas City. Two symposiums, one on "Pulmonary Tuberculosis" and the other on "Diabetes" will be presented. Those who wish to contribute papers on these or any other subjects, should communicate with the secretary at once, as the program will be limited, and papers will be placed in the order in which the titles are received.

THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS.—It is hoped that all persons who are interested will take part in the November meeting of the National Association in New York. The Executive Committee wish reports from as many different countries as possible and from each State of the Union. The transactions of the November meeting and of the three preceding meetings will be published.

PERSONAL.—DR. ALBERT VANDER VEER was elected President of the American Surgical Association at the meeting in San Francisco in July.

—DR. HOLMES C. JACKSON, who received his training in physiological chemistry under Professor Russell H. Chittenden at Sheffield Scientific School and for several years has been adjunct professor of physiological chemistry at the Bellevue and New York University Medical School, has been secured to take charge of the new department of physiological chemistry at the Albany Medical College.

—MRS. E. M. SIMPSON, superintendent of the Training School for Nurses of the Massachusetts Homeopathic Hospital, at Boston, Mass., has been appointed superintendent of the Training School for Nurses of the Albany hospital to fill the vacancy caused by the resignation of Miss Emily McDonnell. Mrs. Simpson, who will arrive in Albany either the middle of September or the first of October, is a Virginian by birth. She is a graduate of the class of 1897 of Johns Hopkins of Baltimore, Md.

—DR. DAWES' address from July 15th to August 10th both inclusive, is Amagansett, Suffolk County, New York. His office hours from August 21st to October 1st, will be 9 to 10 a. m. and 2 to 3 p. m., Saturdays and Sundays excepted, evenings by appointment only.

—DR. JOHN I. COTTER, (A. M. C., 1904) is located in practice at Millbrook, Dutchess County, N. Y.

—DR. M. J. CORNTHWAITE, (A. M. C., 1905) is located in practice at Rock City Falls, N. Y.

—DR. WALTER L. COWELL, (A. M. C., 1905) has settled in practice at Olean, N. Y.

MARRIED.—TEDFORD-BROWER.—At Thompsonville, Conn., June 28, 1905, Dr. ROBERT HILL TEDFORD, Jr., (A. M. C., 1893) of Albany, N. Y. and Miss OLIVE EMMONS BROWER. Dr. and Mrs. Tedford reside at 116 Central Avenue, Albany.

DEATH.—DR. CHARLES DARIUS ROGERS, of the Class of 1888, Albany Medical College, died at Denver, Colorado, July 8, 1905.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. EASTERLY ASHTON, M. D., LL. D., Fellow of the American Gynecologic Society; Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Octavo volume of 1079 pages, containing 1046 new and entirely original line drawings. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$6.50 net; Half Morocco, \$7.50 net.

This text-book consists of 1079 pages with 1046 new line drawings. In his preface the author states that he has tried to give a thoroughly detailed account of the practice of gynecology from the standpoint of the general practitioner and the student of medicine. He believes that there is "a place for a Practice of Gynecology which aims to take nothing for granted in describing gynecologic diseases, and which not only states what should be done in every case, but also gives directions and illustrations so explicit that they may be intelligently and easily followed." By means of the illustrations he has endeavored "so far as possible to show each step of the various methods of diagnosis and treatment, as well as the different operations, by a separate drawing in order to clarify the text and enable the student to see at a glance the details of the several procedures. All the instruments, needles, and suture materials used in every important operation are shown by a separate drawing, which is placed before the operative technic, so that the surgeon may readily select what is required and be sure that nothing has been omitted. The same plan has been followed in illustrating the instruments used in making the various gynecologic examinations, as it was thought to be an advantage for the examiner to see at a glance precisely what was needed in a given case."

The book is arranged on an anatomic basis; each organ or part, including the classification of its diseases, their diagnosis and treatment is considered in a most systematic manner. Additional chapters on Microscopic and Bacteriologic Examinations, The Blood in Relation to Surgery, the X-ray in Gynecology, Hydrotherapy, etc., are also included.

The various subjects are so systematically arranged that some of the classifications seem forced and in places one is apt to be misled as to the relative importance of different phases of the same subject. The author wishes to leave "nothing to the imagination and common sense of his readers" and this is led to repetition and attention to details both in the text and in illustrations, which has added greatly to the size of the volume.

The illustrations for the most part clearly show what the author wishes to bring out. Their distribution unfortunately is not as even as it should be. The important subject of cancer of the uterus, where illustrations would be of such great assistance in demonstrating to the student and the general practitioner, the various manifestations of the disease and

why an early diagnosis is of such great importance and how this diagnosis can be made, has been left to the imagination of the reader as far as illustrations are concerned. On the other hand, the rather unusual and certainly relatively unimportant subject of vaginal cysts is most profusely illustrated.

The author disarms any criticisms against his consideration of the operative side of the subject by stating that as it would be impossible to describe all the various operations, he has only described those methods which he considers to be the best.

This book can be recommended to the student or practitioner who wishes a text-book of gynecology in which there may be found not only the clinical manifestations of gynecological disease and their diagnosis, but also explicit directions both in text and by illustration for the general, local and operative treatment of these conditions. The book is well indexed and this with its systematic treatment of the subject matter makes its contents very accessible.

JOHN A. SAMPSON.

Acute Contagious Diseases. By WILLIAM M. WELCH, M. D., and JAY F. SCHAMBERG, M. D., of Philadelphia. 781 pages, illustrated with 109 engravings and 61 full-page plates. Published by Lea Brothers and Co., Philadelphia, 1905.

At the outset it may well be said that much should be expected from this volume, since the authors are unusually conspicuous in the chosen field. Dr. Welch as Diagnostician to the Bureau of Health and Consulting Physician to the Philadelphia Municipal Hospital for Contagious Diseases, and Dr. Schamberg as Professor of Dermatology and Infectious Eruptive Diseases to the Philadelphia Polyclinic and College for Graduates in Medicine, and likewise associated with Dr. Welch in his work in the health bureau, have had unlimited advantages for observation in the work covered by the title of this volume, and have given the benefit of this already to medical literature.

The field which their topic presents has attracted other contributors within recent time. G. H. Roger, of Paris, has sent out a volume of scientific value on the etiology and diagnosis of infectious diseases; Dr. A. C. Abbott has prepared one on the Hygiene of Transmissible Diseases; Corlett's volume on the acute exanthematous diseases is in the hands of many—all these titles being suggestively different, and variously treating the same general subject, in many ways admirably. And in the same category comes the most elaborate treatment of this group of diseases in a supremely satisfactory way in Nothnagel's Encyclopedia.

Two things especially characterize the volume before us; the practical handling of the matter, and the elaborate illustrations. The latter is especially conspicuous on opening the book. The evolution of vaccine lesions day after day; vaccinal scars; illustrations of the protection given by vaccination; full-page plates of smallpox in the same subject day after day, and various types, including mild cases of recent time so prevalent, and modified variola in its stages; lesions of other diseases of diagnostic significance; some satisfactory plates of scarlet fever, measles and rubella,

give a practical value to the book in which it is to a degree unique and not equalled in value in any other work. No such elaborate picturing of the skin lesions of the exanthemata has been presented in any volume heretofore produced, and very likely the photographic art has not developed to a degree equal to this work heretofore. The photograph may be illusive and delusive but nothing else serves so well to depict with truthfulness and reality when well taken. The group of plates showing the same subject, beginning with the third day of smallpox, shows the identical lesions on successive days as perfectly as they could be studied on the living subject, and with the added advantage of seeing them side by side. All of the many other plates are not as successful as these, but most are instructive in some detail sought for by the trained observer, such as the distribution of lesions, complicating dermatoses, mild types, syphilides and bromide rashes of diagnostic value. The varicella plates are less satisfactory.

There are some good plates of measles, scarlet fever and rubella, the latter especially. To get these with the photograph is not easy.

Vaccinia fills one hundred and forty pages. The authors have repeatedly vaccinated persons recently recovered from smallpox, always without success; this is our experience but some have claimed to have succeeded. They appear to favor one site of vaccination, but while the arm will be more sore it seems to us better to make two insertions, certainly in case of exposure to smallpox. On vaccinal mortality the authors give no personal observation, but quote Kübler's statement that there were 113 deaths among 32,000,000 vaccinations in the German Empire from 1885 to 1897. It would seem fair to qualify this as far too high for the better views of to-day. In this State during the last few years millions of vaccinations must have been done and not more than two or three certificates of death from vaccination have come to the State Department of Health, in all of which there was found on inquiry fair reason to believe that the cause was adventitious. Doubtless ills short of fatality have been not infrequent, but vastly too much unrefined work is done in this simple but delicate operation, the method for properly doing which is pointed out in this treatise.

An interesting account is given of an improperly diagnosed case of varicella brought to the Municipal Hospital and communicating it to thirty-three children having or recovering from smallpox. Mention is not made of varicella associated with other diseases, as for example herpes zoster. We should be glad if more definite recognition had been made of the confusion that often meets us between the mild smallpox seen to-day and varicella and the essential means of distinguishing.

The erythematous exanthemata fill over 200 pages and the chapters are eminently satisfactory. Especially is this true of rubella, which frequently excites our interest.

There is a lengthy chapter on typhus fever, with which most of us have no personal experience.

Diphtheria has 160 pages and the subject is brought down to the present time, perhaps more so than the elaborate treatment in the classical volume in the American issue of Nothnagel.

The book ends with a short chapter on disinfection, closing a work which is a most welcome addition to the literature of a very important department of medicine and the practical work of the sanitarian and the general practitioner. It is a book not of theory but of practice and will edify and instruct everyone who has the fortune to possess it. F. C. C.

A Treatise on Bright's Disease and Diabetes, with Especial Reference to Pathology and Therapeutics. By JAMES TYSON, M. D. Second Edition, Illustrated. P. Blakiston's Son and Company, Philadelphia, 1904.

Twenty-three years elapsed between the publication of the first and second editions of this book. In the meanwhile many of our conceptions of Bright's disease have changed, and much new knowledge regarding diabetes, especially the pancreatic form, has been gained. As a result Dr. Tyson has had to practically rewrite his book. In its present form it is a volume of nearly 400 pages, of which 244 are devoted to Bright's disease, and the remainder to diabetes. The preliminary chapters deal with the anatomy of the kidney, the methods of testing for albumen, and the significance of casts. We could have wished that in these chapters more space could have been devoted to a discussion of the significance of albumen in the urine, as to many practitioners albumen in the urine is always interpreted as Bright's disease. In the chapter on the significance of casts, too, we think that Dr. Tyson perhaps lays too much stress on their importance. While they probably always mean that some kidney lesion is present, such lesions are often only temporary, or if permanent are slight. We do believe, however, that the presence of a few casts in an otherwise healthy urine, especially in middle aged people, is often a timely warning to the physician that serious lesions may follow unless changes in the patient's habits are made. The remaining chapters on Bright's disease are taken up with detailed descriptions of the various forms of this trouble, and an excellent chapter on the eye lesions by Dr. de Schweinitz. If any criticism is to be made, it is one that applies to almost any textbook, namely a tendency to mark off the clinical and urinary pictures of the different forms of the disease more sharply than nature does this. This is not a bad fault in a text-book however, and the practitioner can be relied to fill in the exceptions as his experience widens. The chapters on Diabetes are satisfactory, though owing to our lack of knowledge on many points they are necessarily incomplete. The book contains a fairly extensive bibliography of the older literature on Bright's and Diabetes, and a few modern references. The writer seems to have absorbed the more important of the modern views, especially in regard to treatment. For this reason we think the book is to be recommended, for it represents the wide experience of an active clinician tempered with a proper dash of conservatism. The reader must not expect to find in Dr. Tyson's book an expose of the subject from a strictly modern point of view, but he will find much common-sense therapeutic advice, and clinical wisdom.

G. B.

A Text-Book of Legal Medicine. By FRANK WINTHROP DRAPER, A. M., M. D., Professor of Legal Medicine in Harvard University; Medical Examiner for the County of Suffolk, Massachusetts. Octavo volume of 573 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Company, 1905. Cloth, \$4.00 net.

In at least one state of the Union, Massachusetts, the old Coroner System, with its red tape and mediaeval embellishments, has given place to a rational and intelligent system of medical examiners. It is to be expected that such a system will produce from time to time men capable of expressing the various phases of Legal Medicine from the standpoint of the United States laws, and Dr. Draper is such a man. It is, on the other hand, hardly to be expected that the coroner's physicians appointed under the old coroner's system, changing frequently, generally devoid of special training, wretchedly paid, and often political hacks, are likely to produce medico-legal literature of value.

Dr. Draper's work is said to be written mainly for the use of medical students, and covers the whole of Legal Medicine except Toxicology, and the Medico-legal relations of Psychiatry. The work covers in a little over 500 pages, medical evidence and medical witnesses, identity, impotence and sterility, rape, abortion, the signs and the various forms of sudden and criminally produced death, the legal relation of the physician to his patient, and the more important points in medico-legal autopsies. All of these subdivisions are treated in an adequate, but not too extended manner. The legal citations which occur from time to time are limited to Massachusetts law, but as it is obviously impossible to cover the laws of all States, and as Massachusetts has undoubtedly the most intelligent laws in respect to criminal investigations, this is an advantage rather than a fault. The book is well written throughout, though it contains occasional mistakes in the text which will doubtless disappear in later editions. As a brief but comprehensive survey of the subject, evidently written from and not for experience, it is to be highly recommended both to the student and the practitioner.

G. B.

Studies in the Psychology of Sex—Sexual Selection in Man. I, Touch, II, Smell. III, Hearing. IV, Vision. By HAVELOCK ELLIS, 6 3-8 x 8 7-8 inches. Pages xii-270. Extra cloth, \$2.00 net. Sold only by subscription to Physicians, Lawyers, and Scientists. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

The study of the psychological questions relating to sex is, in this country at any rate, almost looked on as a thing unclean, and as a consequence is but little treated of by American physicians. While it is true that to the clean all things are clean, and while it is also true that the sexual instinct is our most fundamental one, the study of subjects relating to it is fraught with difficulty and danger, difficulty in gaining accurate data regarding a subject on which most people are reticent, and danger that the results may fall into the hands of the prurient and mentally unclean and cause incalculable mischief. Nevertheless, such study is necessary and eminently proper, and is of importance to the physician especially

on account of its pathological aspects. In his present volume Havelock Ellis treats of the effect of the senses upon sexual selection in man. He discusses the effects which touch, smell, hearing, and vision have upon human beings so far as the attraction of the two sexes is concerned. The matter is taken up in a broad way, numerous references are made to the effect of the same senses in the lower animals, and the whole matter is discussed, as it should be, from the standpoint of comparative psychology. Apart from its medical aspects the book contains many matters of general interest, and is full of information which will be new to many practitioners. Many things are invested with a sexual meaning which would not receive this association at the hands of the ordinary observer, such as ticklishness. The work terminates with appendices on the origin of the kiss, and some histories of sexual development which do not seem to have very much bearing on the particular phase of the subject treated in this volume. The book is attractively written, and contains a large amount of information for those who are particularly interested in this subject. G. B.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by A. O. J. KELLY, A. M., M. D., Philadelphia, U. S. A. With the Collaboration of WM. OSLER, M. D., Baltimore; JOHN H. MUSSER, M. D., Philadelphia; JAS. STEWART, M. D., Montreal; J. B. MURPHY, M. D., Chicago; A. MCPHEDRAN, M. D., Toronto; THOS. M. ROTCH, M. D., Boston; JOHN G. CLARK, M. D., Philadelphia; JAMES J. WALSH, M. D., New York; J. W. BALLANTYNE, M. D., Edinburgh; JOHN HAROLD, M. D., London; EDMUND LANDOLT, M. D., Paris; RICHARD KRETZ, M. D., Vienna. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume I, Fifteenth Series, 1905. Philadelphia and London: J. B. Lippincott Company, 1905.

In the section on treatment Dr. A. Chauffard contributes an article on "Therapeutic Indications in Infected Cholelithiasis" in which he concludes that in one class of cases an immediate operation is necessary, that in a second class surgery can only be a last resort because of the patient's age or excessive fatness, and that in a third class medical treatment will often give good results.

In the medical section there are three articles on the subject of heart disease. In the first of these Dr. James J. Walsh points out the importance of the use of the eye and the hand in determining the location and character of the apex beat. In "The Early Diagnosis of Heart Disease in Children" Dr. J. Porter Parkinson shows that it is often difficult to diagnose cardiac disease after indefinite attacks of rheumatism but that it is important in such cases that children should have rest until the danger of heart complications is past.

In the surgical section Archibald Young, M. B., C. M., B. Sc. (Glasg.) writes on "Skin-Grafting in the Late Treatment of Severe Burns Involving Extensive Areas of Skin." The writer has modified Wolf's method in order to save time by rapidly cutting the flap down to the aponeurosis and then trimming off the fat with scissors, and he does not scrape away the superficial layer of granulation tissue in ordinary cases. He uses a gauze dressing moistened with saline or borax solution, but places beneath it a layer of closely perforated wide mesh gauze or oil silk which is left when the dressing is changed and holds the grafts in place. Twelve cases are reported with a number of illustrations showing the results obtained by the method. Dr. A. Ernest Gallant's article "The Treatment of Glenard's Disease," is the conclusion of a paper in the last volume of this quarter. Dr. Gallant does not think that surgical interference is often indicated but usually recommends a corset made for the patient and applied in recumbent position with the hips elevated. Rose's plaster binder can be used as a temporary support. Some of the patients need rest treatment.

About one-third of the volume is given to "Progress of Medicine During the Year 1904." The article is divided into three parts, "Treatment," by A. A. Stevens, M. D.; "Medicine," by David L. Edsall, M. D., and William B. Stanton, M. D.; and "Surgery," by Joseph C. Bloodgood, M. D. These writers have succeeded in giving a review of the new work reported in a readable form for the practitioner and full references to the original articles are given.

R. G. C.

The American Year Book of Medicine and Surgery, Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. *Volume II, General Surgery*, Under the general editorial charge of GEORGE M. GOULD, M. D. Philadelphia and London: W. B. Saunders & Co., 1905.

Each year finds the scope of this important work decidedly increased and each year it becomes more and more invaluable to the physician, surgeon or specialist who would be familiar with the more important advances in his department of medical science.

The volume is made up chiefly of a review of the more important contributions during the past year to surgical literature, with shorter sections devoted to Obstetrics, Gynecology, Ophthalmology, Diseases of the Nose, Throat and Ear, Orthopedic Surgery and Anatomy. It is impossible to review in any detail the subject matter of the volume, which to be appreciated must be carefully studied. It has been, of course, impossible to refer to all the contributions to the departments of science treated of in this volume, but great care has been taken to select those articles and monographs which are of the greatest importance and which show most clearly the general trend of surgical thought.

The articles are unusually well abstracted and the grouping of these abstracts is most excellent, thus rendering it very easy for one to famil-

iarize himself with the important advances in any one department of surgery or the surgical specialties. One very commendable feature of the work is the promptness with which it is issued after the close of the year and before the subject matter has become more or less out of date. In this respect the volume is decidedly more valuable than its German prototype, the "Jahresbericht über die Fortschritte der Chirurgie."

No surgeon who wishes to be abreast of the times can well afford to be without this volume, and each year's success bespeaks even a more exhaustive volume for the next.

A. W. E.

The Surgical Treatment of Bright's Disease. By GEORGE M. EDEBOHLS, A. M., M. D., LL.D., Professor of the Diseases of Women in the New York Post Graduate Medical School and Hospital; Consulting Surgeon to St. Francis Hospital, New York, etc. Frank F. Lisecki, Publisher, 9 to 15 Murray Street, New York, 1904.

This volume is composed of a collection of the different papers the author has written on subjects more or less directly related to the surgical treatment of Bright's disease, together with a tabulation of all such cases treated by him.

Considerable pains have been taken to establish the fact that the author is entitled to the credit for priority in this line of work and his contention seems to be fairly well sustained. His attention was originally directed to this subject by the observation that mobility of the kidney seemed to be a factor in the development of Bright's disease and the further observation that the symptoms of Bright's disease often disappeared after such a kidney was fixed. No reference is, however, made to the fact that the great majority of movable kidneys are not associated with any evidence whatever of Bright's disease. The method of renal decapsulation is described in detail and consists in the removal, mainly by dissection with the finger, of the capsule of the kidney and the complete excision of the capsule. The belief is that after such a procedure numerous new formed blood vessels develop about the periphery of the kidney and in this way the blood supply of the organ is greatly increased, the elimination of toxic substances accelerated and the regeneration of kidney epithelium favored. Usually the operation is performed upon both kidneys at the same time. The author, however, believes that not infrequently Bright's disease begins in one kidney and may remain localized in one kidney for a considerable time.

Renal decapsulation for puerperal eclampsia has also been practised in a few instances with apparently favorable results. The author believes that in all forms of nephritis renal decapsulation is indicated.

The volume contains a more or less detailed report of seventy-two cases of so-called Bright's disease treated by the author by renal decapsulation. The diagnosis of Bright's disease in some of these cases, at least, seems to be decidedly questionable, and in but very few instances were these diagnoses confirmed by microscopical examination of the kidney tissue. When such examinations were made the tissue examined was simply bits which adhered to the capsule removed.

A perusal of this volume leaves one with the feeling that the author has been over-zealous in his attempt to prove the curability of Bright's disease by renal decapsulation and has scarcely brought forward sufficient unquestioned clinical or pathological evidence to substantiate his claim. Not all individuals who may occasionally present a trace of albumen or a few casts in the urine can be considered as cases of Bright's disease, and yet it is upon many such cases that this report is based.

Renal decapsulation in the hands of most surgeons who have attempted it has already been discarded, and it is scarcely possible that this method of treatment will ever be demonstrated to be of much practical value.

A. W. E.

Saunders' Question Compend—Essentials of the Practice of Medicine. Prepared especially for students of medicine. By WILLIAM R. WILLIAMS, M. D., formerly Instructor in Medicine and Lecturer in Hygiene, Cornell University; Tutor in Therapeutics, Columbia University (College of Pharmacy and Surgeons), New York. 12mo of 461 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Double number. Cloth, \$1.75 net.

This book of nearly 500 pages has for its object the usual aim of the Quiz Compend, *i. e.*, the condensation of the subject so that it can be rapidly absorbed by the student. It is of course an almost impossible task to cover the field of medicine to any advantage in a work of this size, and of necessity some rare conditions are not discussed. The material contained in the book is, in the main, correct, though slips have occurred in places, and the necessary condensation has occasionally led to the insertion of statements which are misleading. The various subdivisions of Medicine are taken up systematically, under Infectious Diseases, Animal Parasites, Heat Stroke and Intoxications, Constitutional Diseases, and the Various Systems of the body. For the student who desires to use Quiz Compend this book will doubtless be of value, though the necessary condensation will unavoidably convey imperfect and even false impressions of the picture presented by some diseases.

G. B.

Clinical Treatises on the Physiology and Therapy of the Disorders of Metabolism and Nutrition. By Professor DR. CARL VON NOORDEN. Authorized American Edition translated under the direction of BOARDMAN REED. Part VI. *Drink Restriction (Thirst Cures), Particularly in Obesity.* By Professor CARL VON NOORDEN and Dr. HUGO SALOMON. New York: E. B. Treat and Company, 1905.

This is the sixth of the series of treatises published by von Noorden and his pupils on metabolic disorders. Like its predecessors, while founded on laboratory work, it contains much of practical bearing on the treatment of disease. The contents include a historical review of thirst cures, a review of the physiological effects of thirsting, the results of the authors' experiments in human beings, and the therapeutic considerations deduced from their work. The conclusions reached are that thirst cures may be of considerable benefit if used under the proper conditions. In cardio-

vascular disease, and chronic interstitial nephritis a moderate degree of water restriction is of value because it relieves the stomach of work, decreases the strain upon the circulatory system, and leads to dehydration of the blood and tissues. The restriction of liquids in obesity cures is not believed to act directly by causing a fat cleavage, but the slight effect which is produced is believed to be due to the concomitant loss of appetite. As far as obesity is concerned therefore von Noorden contradicts the popular view that excessive drinking of water is *per se* a cause of fatness. That restriction of water plays some part in the treatment of obesity is still admitted, but the influence exerted is indirect and acts through the circulation and appetite. The restriction of liquids which is found to be of value in chlorosis perhaps throws some light on Sir Andrew Clark's success in this disease with the use of salts. The work concludes with a series of tables which summarize the work on which the conclusions are based. This monograph, like its predecessors, can be highly recommended as containing much practical therapeutic wisdom.

G. B.

SURGERY

Edited by A. Vander Veer, M. D. and Arthur W. Elting, M. D.

Contribution to the Symptomatology of Carcinosis of the Skeleton. (Beitrage zur Symptomatologie der Carcinose des Rumpfskelettes.)

KARL PETREN. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, XIV Band, IV Heft, 1905.*

In practically all of the text books the symptoms of carcinomatous metastasis to the skeleton are laid down as spontaneous fractures, deformities, or the results of compression of the spinal cord. Very little attention has apparently been paid to the existence of other earlier and perhaps more important symptoms. Most of the studies relative to metastasis to bone have been confined to the occurrence of that process in the vertebræ.

The writer reports four cases of this character, in three of which metastasis was quite evident in the bones of the pelvis, and in two of these cases it was assumed to be present in the vertebræ, although this part of the body was not examined at autopsy.

In one case the first evidence of the metastasis to the bone occurred eight years after the removal of a carcinoma of the left breast. The writer has collected a number of interesting cases of late metastasis to bone and draws the conclusion that after the extirpation of carcinoma of the breast the disease may remain latent in the bone marrow for as many as ten or eleven years before the symptoms of metastasis develop. It would also appear that the development of a carcinoma metastasis in the bone may occur very much more slowly than in the other organs.

He calls attention especially to the slight modification in the contour of the bones of the pelvis in the three cases reported by him and emphasizes this as one of the most important symptoms of the condition.

He calls attention to a collection of statistics from autopsy material reported by Török, Wittelshöfer and Sommerfeld, of 402 cases of carcinoma

of the breast in which metastasis occurred to the spine in fourteen cases, and to the bones of the pelvis in ten. He is inclined to the view that metastasis to the bones of the spine and the pelvis is of more frequent occurrence than is generally supposed, and emphasizes the fact that Charcot many years ago called especial attention to this.

Within comparatively recent years a great deal of work has been done to show the very frequent occurrence of metastasis of carcinoma of the prostate to the bones, and he presents the statistics of Courvoisier, who found bone metastasis in fifteen of twenty-one cases of carcinoma of the prostate. The general consensus of opinion appears to be that bone metastasis in this form of carcinoma is the rule. It also appears to be conclusively shown that metastasis to the spine in association with carcinoma of the prostate has little or no tendency to cause a compression of the spinal cord. He believes that metastatic carcinoma of the vertebræ often present only bone symptoms, that is, mainly pain referred to the bones involved or their vicinity, and that very frequently such metastases resulting from carcinoma of the prostate present no other symptoms during their entire course. He believes that this is also more frequently true of bone metastasis from carcinoma of the breast than is generally assumed.

The most important so-called bone symptoms are apparently those of pain following movement of the involved bones. This pain is especially apt to be produced by an attempt on the part of the individual to change his position such as rolling over in bed, sitting up or rising from a sitting or recumbent posture to an erect posture. A further characteristic is the comparative freedom from pain and discomfort when the patient lies quietly in a recumbent posture. The pain may further at times occur in paroxysms, followed by considerable periods of freedom from pain, and this condition may last for months or even for a few years. It is very often regarded as rheumatic in the early stages and is usually not associated with any sensory or motor disturbances.

The writer emphasizes the fact that the occurrence of severe and protracted pain after carcinoma of the breast or the prostate should arouse a suspicion as to an involvement of the bones, even though there may be no actual evidence of such a lesion. The localization of the pain is often more or less ill-defined and variable and may exist a long time before there are any definite anatomical changes; and may furthermore be entirely unassociated with any symptoms of compression of the nerve roots or the spinal cord.

Late Recurrence of Carcinoma. (Ueber Spätrecidive des Carcinoms.)
JORDAN. *Archiv für klinische Chirurgie*, LXIV, 2 Heft.

While surgeons as a rule regard three years of freedom from recurrence as indicative of a permanent cure after operation for carcinoma, gynecologists have already raised this limit in carcinoma of the uterus to five years and it would appear that it must be made even longer. Cases which have remained free from carcinoma for ten to twenty years do not absolutely prove a permanency of cure, for recurrence may occur

even after that period of time has elapsed. One factor which is frequently not considered in connection with carcinoma and which has a very decided influence upon the occurrence of recurrence is the period of development of the carcinoma. We have absolutely no knowledge of how long a time in a given case is required for the neoplasm to develop from its very beginning to the demonstrable tumor. We do know that the rapidity of growth is very variable. As a rule metastases show the same relative energy of proliferation as the tumor from which they originate. The number of cells left behind after the operation for carcinoma also probably exert an influence upon the rapidity of development of the recurrent tumor. The character of the tissue which surrounds the cells left behind also exerts an influence, for cells in scar tissue may remain latent for years because of the poor nutrition of the part.

The writer reports two cases illustrative of the chronic protracted occurrence of carcinoma. The first case was that of a carcinoma of the tongue which was extirpated in 1885 with recovery. Nineteen years later there was a local recurrence which also recovered after operation. The microscopic examination of the original as well as the recurrent tumor demonstrated them to be of exactly the same character and this would indicate that it was a recurrence rather than another independent new growth.

The second case was a carcinoma of the breast operated upon in 1889 which has presented a recurrence at intervals of three years since, the last operation being in 1903 and to-day more than fifteen years from the beginning of the trouble the patient appears to be perfectly well. These cases would naturally be included under permanent cures if they had not been carefully followed. It is quite evident that many so-called permanent cures are merely cases in which recurrence is late. Most carcinomata develop rapidly and recur rapidly usually in the first or second year. In a few however the growth is slow and the recurrence may develop only many years after the original operation.

The Lymph Gland Metastasis in Carcinoma of the Stomach. (Die Lymphdrüsenmetastasen beim Magenkrebs.)

RENNER. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, XIII Band, 2 Heft.*

The writer has undertaken a study of the above condition as presented in fifteen cases of carcinoma of the stomach which came to autopsy. Six of these cases had been previously operated upon by Mikulicz, the material came from the laboratory of Ponfick.

The writer directed his especial attention to the solution of the four following questions: (1) whether the macroscopic appearances allowed one to make a positive diagnosis of the carcinomatous involvement of the lymphatic gland; (2) whether there is a definite relationship between the location of the tumor and that of the diseased glands; (3) whether the metastasis to the lymphatic glands occurs as a rule by embolism or by continuity; (4) whether in cases that have been operated upon radically the autopsy reveals involvement of remaining glands.

In regard to the first point he decides that a positive diagnosis of the presence or absence of a carcinomatous involvement of a lymphatic gland can not be made macroscopically in every instance. It frequently happens that the glands appear to be large, hard and nodular without any microscopical evidence of carcinoma. On the other hand it frequently happens that small soft almost normal looking glands will present extensive microscopical evidence of carcinoma. He raises the interesting question as to what one may regard as the normal size of a lymphatic gland in the vicinity of the stomach and states that the measurements laid down by Lengemann of 10x5 millimeters for oval glands, and 6x6 millimeters for round glands is approximately correct. He believes that an attempt should be made to remove all glands in the general territory of the operation upon the stomach no matter what their appearances may be so far as this can be done without seriously adding to the danger of the operation. He calls attention to the view advanced by Peterson that carcinoma cells may be destroyed within the lymphatic glands and thus fail to give rise to recurrence after an operation in which all of the regional glands were not removed. He also emphasizes the fact that the carcinoma cells may remain latent for many years in the lymphatic glands to develop later as so-called late recurrences.

In regard to the relationship between the site of the tumor and the site of the infected glands he believes that only in exceptional instances is there an absence of infection of the regionary glands which further emphasizes the great necessity for their removal. The glands most frequently infected are (1) those of the subpyloric region, (2) those of the lesser curvature, (3) those of the supra-pancreatic region, (4) those of the retropyloric region and with relative infrequency the cardiac glands, the hepatic glands, the mesenteric, sacral, lumbar, etc. In addition to the regionary glands other glands more or less remotely situated may be infected.

In regard to the question as to the mode of infection of the lymphatic glands the writer states that in a study of 500 sections from 300 glands he has found scarcely any evidence in favor of an involvement of these glands by continuity and although this mode of infection may occur it is relatively infrequent. Infection therefore is assumed to be embolic in character.

In regard to the prognosis of radical operation as based upon the finding of glands at autopsy upon cases subjected to such treatment he states that in three of the operated cases there was no evidence whatever of any infection of any of the lymphatic glands remaining after operation. In one or two instances there were only one or two infected glands discovered at autopsy. In two of the six operated cases in which at autopsy infection of the regionary glands were found this was limited to those of the supra-pancreatic region. A radical removal of these glands can only seldom be performed because of the difficulties and dangers attendant upon it. The mortality of cases in which this attempt is made is very much greater than in instances where it is not. The writer believes with Most that when one finds that the glands about the pancreas are clearly involved by metastasis the prognosis of a radical operation is bad.

Experiments Concerning the Mode of Extension of Genital Tuberculosis in the Female. (Experimente über die Ausbreitung der weiblichen Genital tuberculose im Körper.)

P. BAUMGARTEN. *Berliner klinische Wochenschrift*, No. 42, 1904.

Previous experiments performed by the writer have demonstrated that the extension of a tuberculous infection within a definite system occurs only in certain directions and that the extension from one system to another occurs only relatively infrequently. Under the writer's direction Dr. Basso has performed a series of experiments upon rabbits to determine the mode of extension of tuberculous infection of the genital tract. In one series of cases the lower portion of the vagina was infected and in another series the upper portion was infected, while in still another the horns of the uterus were infected and in still another the peritoneal cavity in the vicinity of the uterus. In the last group of experiments a localized tuberculous peritonitis developed but there was no development of tuberculosis in the genital system. Experiments with direct infection of the genital tract however produced positive results. Infection of the lower portion of the vagina gave rise to tuberculosis confined entirely to this region. This did not extend into the upper vagina but did as a rule involve the urethra. The bladder and higher urinary structures remained normal. Infection of the upper portion of the vagina gave rise to tuberculosis localized in this part of the genital tract. This did not extend in either direction. Infection of the uterine horns caused the development of tuberculosis which extended through the uterus toward the vaginal portion down into the vagina and stopped at the boundary line of the upper and lower portion of the vagina. The opposite horn of the uterus never became involved nor did the distal portion of the tube become infected.

In some cases a localized tuberculous peritonitis developed from extension through the walls of the uterus or tube. From these facts it is seen that the extension of female genital tuberculosis is in a definite direction and this direction corresponds with that of the secretory stream which carries the ovum from the tube into the uterus. A so-called ascending extension of the tuberculous infection was never observed. The writer discusses the question as to why tubercle bacilli introduced into the lower part of the peritoneal cavity do not find their way into the tubes and produce infection of the same. He believes that this is due to the fact that the bacilli introduced into the peritoneal cavity rapidly produce degeneration of the peritoneal epithelium with pathological extension as result of which the normal intra-peritoneal fluid stream is disturbed. Furthermore as the process progresses the infection seals up the ends of the tube. Tuberculosis never involves the urinary apparatus of the female from the genital system unless the vagina is infected and even in these cases only the urethra is affected.

Tuberculosis of the genital and urinary systems are thus as a rule definite and distinct infections. Infection can extend from one to the other in the male only in the region of the prostatic urethra in genital tuberculosis and the prostate in urinary tuberculosis. In the female this extension from one system to the other can occur only in the lower vagina and urethra.

Tuberculosis of the urethra does not tend to ascend nor does the tuberculosis of the prostate tend to involve the vas deferens or the testicle. In cases where both the genital and urinary systems are infected it seems fair to assume that the disease has developed in each system independently. The writer believes that his experimental observations have been absolutely confirmed by the pathological studies of the infection in the human being and finds that his views have been adopted by many surgeons.

PSYCHIATRY

Edited by G. Alder Blumer, M. D.

Criminal Anthropology. The Treatment of the Criminal. (Anthropologie Criminelle. Le traitement du criminel.)

P. KERVAL. *Le Progrès Médical*, 3 December, 1904.

Although the fact is not distinctly announced in the introductory paragraph of this article, it is essentially a review of Prof. Aschaffenburg's book on *Das Verbrechen und seine Bekämpfung*.

Some of the causes of crime are social, others individual. The former are to be sought in the seasons, races, religion, countries, towns and professions; popular customs; alcohol and toxic excitants; prostitution, gambling and superstition and the economic and social situation. Individual causes comprise genealogy and education, instruction, age, sex and the position of the family; physical, mental or psychopathic characters; and the classification of criminals. The author, who has had much opportunity for observation, in his position as chief physician of the asylums of the province of La Seine, undertakes to summarize, in this article, the positive results of this catalogue of causes.

The month of July being in Europe specially noted for breaches of morality and the sexual instinct offering an exacerbation then, it seems to have, for man, a period of propensity, comparable to the rut of animals, though in a very mitigated and considerably modified form. Race is denied consideration; the author declaring that, since the transformation of races is so slow a process, it is not here entitled to consideration.

As to religion, a tendency to crime, among catholics, is suggested, but this is ascribed rather to their social condition than to their cult. It is denied that the urban citizen is less honest than is the peasant; the well known superiority of vice's attractions, in the city, is pointed out as a possible item of defence of the former. The influence of alcohol on the quasi-reflex and impulsive reactions is beyond doubt; equally so is its degenerative action. The morphine habitue is likewise a degenerate; the victim of cocain is an alien, his crimes are the acts of a lunatic.

Prostitution, which is inextirpable, results from social, economic vice and from the lack of barracks for public women. This compound cause affects subjects who are prepared for it by education, heredity and an almost psychopathic predisposition. Prostitutes become criminals chiefly through the keepers of the houses where they live and the attendant pimps. If they could be separated from those who exploit them and housed in barracks, as is done in Bremen, all that is possible would be accomplished

in the way of protecting public health, suppressing scandal and limiting clandestine prostitution.

It is not privation that is mainly blameworthy for criminal yielding to temptation, but rather economic prosperity. The laboring man is guilty in the matter of increase of petty crimes, with which alcoholic excess is nearly always associated; even when times are hard, he does not abstain from drinking. A strike is a powerful threat to public safety. Education is one of the most valuable remedies for existing, faulty conditions that result in criminal deeds; by multiplying aptitude to different employments, it diminishes the reasons for having recourse to crime. This is doubly true of an altruistic education. The ability to control one's self does not increase proportionately with the increase of intelligence. The association of the sexes, in factories and stores, though not so much during working hours as when pleasure is sought, after working hours, is a bait to vice; especially for the adolescent, it leads to the prostitution of young girls, with whom it is not so much the safety-valve of crime as a substitute for mendicancy or vagabondage. Nor does marriage exert a favorable influence, as considered from our present view-point, if it be precocious. Persons who are not mentally and materially developed, who are incapable of economic qualities, ought not to be permitted to marry. The medical and social reasons for such prohibition are evident.

Criminals are, in short, endowed with inferior physical organization. They are the issue of the busy classes, of whom the women, during pregnancy, are often compelled to do hard work; the baby coming into the world is often already intoxicated with the drunkenness and disease of its parents. For the same reasons, criminals generally are less intelligent than the average and are remarkably unstable. But it is not possible to say what are their peculiar, psychic characteristics. Prof. Aschaffenburg holds that anyone who ignores the past of a criminal has no title to conclude concerning innate, criminal tendencies; he maintains, likewise, that they constitute a considerable peril and that in a very definite sense.

Is the criminal a peculiar kind of lunatic? The author mentions the difficulty of discriminating between some of the really crazy criminals and those, in an institution who have merely feigned insanity in order to have refuge in such an asylum; also the difficulty about deciding as to the number of lunatics in penal institutions. As to the real, mental diseases that occur during imprisonment, they are the same that are to be found among people living in freedom.

Statistics prove that the proportion of those who are socially dangerous is increasing. It has decreased for adults but has grown, to a greater degree, for children and adolescents. Statistics further show that the hope of saving a criminal, slight at the outset, is nil at the time of his third or fourth conviction. Finally, they demonstrate that the descent to the gulf is effected in a very short time and that our penal system is powerless to arrest progressive corruption. The prodigious army of malefactors lives more or less at the expense of peaceable, law-abiding citizens, whose resources are used to erect penal institutions and support their inmates. After giving figures to show the increase of criminality, the author declares that public insecurity is, therefore, notorious. That the first means

to be employed, to remedy this, is to combat the use of alcohol; develop public assistance; rescue children by educational establishments; assistance of families; social support of prisoners, after their liberation; awakening the moral sense by the energy of the police in the pursuit of criminals, by the press, which ought to abstain from printing accounts of divers criminal deeds; by the family, the church and the school. To adapt the penalty to the individual, and let the duration of the imprisonment depend upon the convict's behavior during its initial stages—this, the author asserts, is the nerve of the prophylaxis of crime. Since the judge has not the advantage enjoyed by the keepers, in a penitentiary, to know the prisoner's temptation to crime and his deserts, during detention, he does best to sentence the criminal without setting a bound to his term and to condemn him conditionally. The convict will then know that his fate depends upon himself, and his improvement.

In suggesting what may be the functions and duties of each official who is concerned with the disposal of criminals, the author says that the judge ought to decide whether a given person is likely to be more benefited by education and treatment than by punishment. With a view to doing this well, the judge ought to have a preliminary course as a warden in a penal institution. On the other hand, the turnkey ought to have, with a view to being most efficient, a deal of judicial and psychologic education. Prof. Aschaffenburg augurs a source of progress to the profit of beneficent reform of those who have proved themselves unfit to mingle with their fellows, from the above suggested collaboration of the judiciary and the functionaries of the penal institutions.

For the vagabond, who, habitually, is a *minus habens*, from a point of view both physical and mental, but who generally is industrious when an inmate of an asylum, one liberally furnished with workshops ought to be provided. In that way vagabonds might make a good large part of what their entertainment costs the state.

As to the drunkard; the one who is quarrelsome in ordinary life, who is violent toward his family, neighbors and the agents of public safety, ought by the decision of the tribunal, to be put in an asylum where drunkards are treated; then, if he proves incurable, into one where his kind are *confined*. A like method of procedure is in order for dangerous lunatics and habitual criminals.

Locomotor Ataxia and Insanity. (Tabes dorsalis und Psychose.)

M. BORNSTEIN. *Monatsschrift für Psychiatrie und Neurologie, Band XVII, 1905, Ergänzungsheft.*

Westphal in 1863 drew attention to a series of cases of general paralysis with spinal symptoms resembling locomotor ataxia, and later cases of the latter disease with the symptoms of general paralysis unrecorded, the combination being designated as tabo-paralysis. Further observation has shown that mental manifestations occurring in locomotor ataxia are not always those of general paralysis. The diagnosis of general paralysis itself is not always easy, and mental symptoms of other conditions are often present; cases have simulated, for instance, chronic hallucinatory

paranoia, or have been preceded by an attack of simple mania, or katatonia. In differentiating locomotor ataxia and general paralysis a difficulty is met at the outset in the identity of the physical symptoms of both. Even the mental dullness of general paralysis is not always distinct.

Hallucinations are to be expected in locomotor ataxia, in consequence of the sensory disorders, and in a tabulation of fifty-six cases of associated locomotor ataxia and insanity, Otto Meyer found the mental symptom-complex to be that of chronic hallucinatory paranoia in twenty-one, the others being widely different mental forms.

The author concludes:

1. There are not enough facts for establishing a special tabetic psychosis.
2. The greater number of ataxic cases associated with functional psychoses show the most frequent and obtrusive symptoms to be hallucinations of the different senses.
3. The mental disturbances of ataxia cannot be regarded as an accidental complication which has nothing in common with the disease itself.
4. The most frequent psychopathic symptom of locomotor ataxia, that is, the hallucinations, has its origin either in the optic nerve atrophy or in the sensations of the tabetics, which are due to the general irritability of the sensory tracts.
5. In patients without pronounced predisposition to mental affections, hallucinations may arise without a marked mental involvement from the severe pains and paraesthesiae. On the other hand, patients with definite hereditary taint, or with a tendency to mental disorder, are apt to develop psychoses of variable character, the most prominent of which are paranoia and depressive states, as melancholia and hypochondria.

Fatal Cases of Functional Psychoses. (Ueber Todesfälle bei funktionellen Psychosen.)

M. REICHARDT. *Centralblatt für Nervenheilkunde und Psychiatrie*, 1 January, 1905, XVI, 1.

Cases of functional mental disorder frequently terminate fatally from a variety of complicating conditions, as malnutrition, exhaustion, secondary infection, and so forth, but it is not easy to prove that patients may die of a functional psychosis alone when all other accidental conditions are eliminated. Occasionally such patients present the clinical appearances of an organic brain affection, and the point has been urged that some severe change in the brain must underlie the symptoms, even though they are functional in character. Such, for instance, is not an unreasonable hypothesis in acute delirium.

The author reports a series of cases of functional character, terminating fatally during a year, in which a cause of death independent of the cerebral affection, could not be determined. The first five cases were fulminating, presented acute delirium, and death ensued in from two to three weeks, with negative results of the autopsies. The second group of cases differed from the first by the presence of greater or less preceding

mental defect. One patient was idiotic, two were subject to periodic mental disturbance, and three were to be regarded as katatonia.

Two cases are recorded which presented the symptoms of organic brain disease: The first was a case of katatonia, and the second a case of dementia praecox, and both with pronounced hereditary taint. They died with indications of chronic compression of the brain, which, in one case, led to osseous changes of the inner table of the skull, and in the other to choked disc of fourteen days' duration. The autopsy revealed a marked disproportion between the capacity of the skull and the weight of the brain. Normally the brain weight in grammes is ten per cent. less than the capacity of the skull in cubic centimeters; whereas, in these cases, there were over two hundred grammes too much of solid substance in the cranial cavity, and the brain was greatly compressed. No focal lesion or histological change to account for this condition was found. An explanation of such a chronic or acute brain enlargement is at present wanting. It may only be asserted that it is not characteristic of any single disease, but may occur in different cerebral disorders, as, for example, with small tumors, which may, in spite of their insignificance, cause brain pressure. There was no œdema, hydrocephalus or inflammatory process; the cerebral substance was abnormally solid and dry. The presence of such marked swelling of the brain in a functional psychosis necessarily indicates profound changes, and yet these are not histologically perceptible. It may further be assumed that in the absence of cerebral tumefaction and pressure, changes in the brain, equally slightly understood, may be so intense as to endanger life, and these are to be estimated in explaining an otherwise enigmatical death. This is the case with a number of patients who perish in the course of a severe, endogenous, maniacal attack, which runs its course quickly, or an acute exacerbation in a chronic psychosis. In the author's cases, excitement, exhaustion and loss of nutrition are not regarded as sufficient to cause the speedy termination of life.

The mental manifestations of any pronounced disturbance of the relations between cranial capacity and brain weight are impeded thought, dulness, stupor, somnolence and coma. Furious delirium with frenzy excludes the probability of cerebral compression. If a patient die with marked maniacal excitement, pronounced pressure of chronic course is not to be expected, but at best acute brain swelling, and this may be often overlooked. On the other hand katatonic stupor, catalepsy, muscle rigidity are characteristic of chronic brain pressure.

The Differentiation of Chronic Alcoholic Paranoia. (Zur Abgrenzung der chronischen Alcoholparanoia.)

RECKE. *Archiv für Psychiatrie und Nervenkrankheiten*, 39 Band, 2 Heft, 1905.

In five cases recorded there was a slowly developed chronic psychosis, characterized by continuously progressive elaboration of delusions with misinterpretation of casual daily events and without disturbance of consciousness or of formal logic. In one case this mental state was anticipated by delirium, and in another by an acute hallucinatory confusion, so that in these two the disease may be said to have had an acute development.

The characteristics of the five cases were, in brief, as follows.

In case I, introduced by delirium, a chronic progressive delusional state supervened. The patient complained and censured, and manifested many ideas of persecution and jealousy, which he gradually referred to his physician. In the course of a year there ensued a fully developed system of delusions, to the effect that he was the son of the German Emperor and his heir, possessed millions and the Russian eastern provinces, but was pursued by the Russian police, the Jesuits, and a criminal association. The patient continued in this condition for years until life was terminated by an inter-current affection.

The patient described as Case II, had an hereditary taint, had passed through an attack of typhoid fever and had had an injury. He had complained of pains in the limbs, which suggested neuritis, and for which he entered the hospital, when he developed delirium tremens, which passed on into a delusional state with persistent disturbance of the special senses. He became quarrelsome, charged his physician with illicit relations with his wife, and for years, through tactile hallucinations of the face, thought he received caresses through the air.

Similar systematized ideas with sensory disturbance were manifested by the other cases. The condition is not frequent, having been found only three times in two hundred alcoholics. The most prominent mental feature of the condition is the tendency to complain. The delusional state is one of persecution, and is regarded as typical of alcoholism; and hallucinations may appear, sometimes early and later fading away. The prognosis is not good, though slight mitigation of the symptoms may occur in time. The writer concludes with the following statement:

1. There is a chronic condition of alcoholic paranoia. This develops upon the basis of chronic alcoholism, either primarily or in direct sequence to delirium tremens or acute hallucinatory confusion.

2. Chronic alcoholic paranoia is to be differentiated clinically from the classic "Verrücktheit" by certain unusual features, which are to be ascribed to the underlying alcoholism. The prognosis is unfavorable, even with complete abstinence. Typical dementia does not ensue.

Chronic alcoholic paranoia is to be sharply differentiated from the transitory paranoia-like states of excitement, which are occasionally manifested during frequent excesses in drink, and rapidly disappear after withdrawal of the alcohol; furthermore, from the terminal states of weakness described by Kræpelin, which remain after delirium tremens or acute hallucinatory confusion, and do not progress to any greater degree of elaboration.

PEDIATRICS

Edited by Henry L. K. Shaw, M. D.

The Pasteurizing of Milk from a Biological Standpoint. (Biologisches zur Pasteurisierung.)

HIPPIUS. *Jahrbuch für Kinderheilkunde*, February, 1905.

The medical profession has been active in late years in improving the milk supply and insisting on clean sanitary conditions in the dairy and milk depots. The object to be attained is to avoid bacterial contami-

nation. Heating the milk is supposed to make such chemical and biological changes that its nutritive value is impaired. The addition of chemicals is prohibited by law and is injurious to the human organism. Subjecting the milk to a high atmospheric pressure, or to ultra-violet rays will kill the bacteria, but these are expensive and impracticable methods. Absolute asepsis in the dairy with rapid cooling and preserving on ice is the best method by far as asepsis is better than antisepsis, but such milk can only be procured in limited quantities. The author wished to determine the cheapest and best method to destroy the bacteria without affecting the character of the milk. He enters into a critical review of the literature on pasteurization and shows that the pathogenic bacteria are destroyed at a temperature from 60 to 65 degrees, C., continued for one-half to one hour.

The special feature of the paper is the study of the effect of the temperature on the biological properties of the milk.

Twelve rabbits were inoculated with raw pasteurized and sterilized milk daily for a week, and a precipitation occurred on the addition of cow's milk to the serum of these rabbits. Even sterilization in an autoclave for an hour did not affect the formation of the precipitins. No reaction occurred when woman's milk was added to the lactoserum.

A number of experiments were made in the bacteriacidal action of cow's milk on the bacilli coli and bacilli prodigiosi. In raw milk this action lasts for six or seven hours. In milk pasteurized for half an hour at 65 degrees, Centigrade, this reaction is not so intense and does not last more than an hour or two while in sterilized milk no trace of this action appears.

The effects of heating on the ferments is very instructive. The oxidizing ferment is destroyed in milk heated to 76 degrees, Centigrade, but is unchanged at a temperature of 60 to 65 degrees. The fat-splitting ferment is unchanged at 62, weakened at 63 and destroyed at 64 degrees, Centigrade. It is present after pasteurizing the milk for one hour at 60 degrees, Centigrade. The salol-splitting ferment is present at 55 degrees, Centigrade, but grows weaker on higher heating and at 65 degrees Centigrade is absent.

The proteolytic ferment works both in a slightly acid and slightly alkaline medium after the milk has been heated to 60 degrees, Centigrade, for an hour or 65 degrees, Centigrade for an half hour and is entirely destroyed at 100 degrees, Centigrade. The amylolytic ferment in raw mother's milk changes starch into dextrin and is unchanged after pasteurizing the milk for one hour at 60 degrees, Centigrade. At 70 degrees, Centigrade it is less active and only converts the starch into erythrodextrin while its action is destroyed by a temperature of 75 degrees, Centigrade, or over.

The author summarizes his paper as follows:

1. Pasteurization effectively destroys all pathogenic bacteria in milk.
2. Pasteurized milk suffers no chemical change.
3. The most important biological properties of raw milk are unchanged or only slightly weakened in pasteurized milk.

ALBANY MEDICAL ANNALS

Original Communications

SOME ANOMALIES OF THE INTELLIGENCE IN DELIRIUM.

Read before the Rensselaer County Medical Society, May 9, 1905, as the address of the writer as retiring President of said Society.

By HIRAM ELLIOTT, M. D.,

Troy, N. Y.

Before proceeding to the specific discussion of the subject of this paper I shall briefly outline a hypothetical scheme of normal mental action. I do this because it will be maintained herein as a fundamental principle that the very same laws govern the action of the diseased brain as govern its action in health. It will be held that just as the normal mind is developed through certain psychological steps from the normal healthy brain so is delirium a legitimate product of that organ in disease. And further it will be contended that disordered cerebral action does not result in the creation of any new product, but rather in the distortion or reduction in quality of the old.

The brain is a reflex nerve-center endowed with consciousness. As a nerve center the scheme of its action is a simple one. It receives sensory impressions and gives out motor stimuli, and so far does not differ essentially from the spinal centers. But as endowed with consciousness the phenomena of its action assume new characters. Incoming sensory stimuli instead of passing over directly to the motor side to reissue in immediate action are brought into view as it were. We are conscious of them. They are subject to analysis, to elaboration and control; they are registered and become the physical basis of what is known as our experience; and when they reissue, it is no longer in a haphazard, but in an orderly and more or less systematic way.

The very beginning then of our mental life consists in the

presentation of sensations into our consciousness. The cry of the newly born child signifies that it is already conscious of discomfort, and as it must have derived that feeling from sensations which have presented themselves into its unconsciousness, there being no other possible source, this primitive feeling is termed presentative. Very early also consciousness notes some relation of this presenting sensation, where it originated for example, and thus develops the first element of intelligence. This is termed a cognition and is obviously presentative also.

Now when an afferent stimulus impinges upon a sensory center it rouses into activity certain of its cellular elements to the production of what appears in consciousness as an image. This may, of course, be visual, or auditory, or olfactory, or gustatory, or muscular, or tactile. When it fades there is left behind upon the nervous structures a more or less permanent impress or vestige, capable of faint revival, and of rekindling the original cognitions derived from it; so that when newly presenting images pass into consciousness, these registered vestiges and their concomitant cognitions tend to represent themselves and be seen along with them. Sensation will no longer be viewed alone but always in relation with images revived from our registered experience. The mental product derived from these two sources will necessarily partake of the qualities of both. The likeness, unlikeness, or what not, between the old and the new will be noted and present experience thus knitted to the past. Hence thought and feeling will now have both presentative and representative characters, or technically it will be presentative representative.

But soon consciousness becomes able to retrace the registered vestiges without the aid of any presenting image at all. It can cause experiences to represent themselves in innumerable combinations, and out of the groups thus called up can derive feelings and cognitions which are independent of present sensory experience, and which are wholly representative. Indeed the well-trained mind is able to repeat this process almost without limit in the formation of representative and re-representative thought. Two series, the emotional and the intellectual, are thus formed, the presentative, the presentative representative, the purely representative, and the re-representative, passing from the simple to the complex, from the concrete to the abstract, and extending further and further from the original sensations, yet never becoming wholly independent of them as registered in the brain.

In some persons this power of abstraction is very great. Out of the faded traces of registered sensory images they are able to construct new and more vivid series of ideal pictures, which are themselves also able to sustain thought, or capable of actual reproduction, as for example in historical paintings. There is also acquired considerable power of ignoring what is extraneous and of confining attention to the series of images desired. Moreover the healthy mind seems not only able to pursue this abstraction, but is also able to put the whole series to flight and turn the trend of thought into an entirely different channel (Griesinger).

Now to ascertain our individual welfare in the light of our present and past experience seems to me to constitute a chief end of thought. Every stimulus, or group of stimuli, from whatever source, seeks immediate transformation into action. If the transformation takes place the act is preceded by a mental diagram or plan into which the personal interests more or less strongly enter. Often many alternatives present themselves from which to choose, but one by one of these is eliminated until a single unopposed scheme of action fills the mind. Now it is the striving for issuance in action manifested by the plans that constitute the desires. When any plan succeeds in absorbing the entire attention of consciousness, and cerebral energy is thus directed to a single purpose the corresponding act must ensue. There is no longer any opposition and we must will.

This clearing of the mental field of what is extraneous, and this constructing line by line of a diagram of conduct is termed decision, and the effort expended is not in willing our acts but in this process of construction of their antecedent plans. To recapitulate in one sentence. Out of the sensations received by the brain and the registered vestiges of these consciousness evolves the emotions and the intelligence; out of these arise those more or less rational plans of action which in their striving for issuance constitute desires; a desire when of sufficient strength to clear the mental field of all opposition is transformed into an act by what is termed an edict of will. (James).

Thus between the simple taking in and giving out as seen in the spinal centers, are developed these series of feelings and cognitions, all that constitutes the emotions and the intelligence, the ever widening realm of mind. Here as in a sealed chamber sensation very imperfectly but indelibly pictures the environ-

ment, and consciousness, guided by its own light, moves silently and swiftly among the figures, noting, comparing, arranging, evolving therefrom the highest product of the human organism, the noblest thing in the universe.

The term delirium may be defined as a deviation of the intelligence from the normal due to cerebral disorder, some of the phenomena manifested being illusion, hallucination, delusion, morbid impulse, incoherence and amnesia. The word delirium literally means "out of the furrow," and I am using it in this paper in its widest sense to cover all forms of intellectual derangement. I have connected these conditions with cerebral disorder, because whatever may be the source of irritations directly or indirectly inducing them, the field of their manifestation is the brain. It is not to be denied, however, that disease at the nerve terminations frequently precedes or even exceeds the central disease, as is seen for example in the nervous phenomena caused by gastric or pelvic disorders. In this way may originate sensations which are so painful and so insistent that consciousness is active chiefly in their direction. The other parts of the sensory mechanism receiving less than their usual share of stimulation, become sluggish or inactive, and thus a sort of one-sidedness in cerebral action is induced. Again in middle ear disease with partial deafness, the environment is by no means fairly and completely presented to the sufferer's consciousness. To him the external world as regards sound differs radically from its appearance to those in health and unless his mental mechanism is extraordinarily stable, morbid suspicions, if not something worse, will appear from time to time in his mental fabric.

In the brain itself pathological changes give rise to morbid mental phenomena in ways that are less easily analyzable. It being the receptive center for all afferent stimuli, sensation will necessarily change in some degree as it changes. Sensory images imperfect even in health will become more imperfect when that organ is diseased. In the toxæmias of the specific fevers the mental mechanism may be in such a highly irritable state that the most trivial stimulus causes only a feeling of pain much as when a strong light strikes the diseased eye. Or on the other hand, the receptive apparatus may be so obtunded by the same poisons, that it does not respond to ordinary stimuli at all, as in uraemic coma. Again in hyperactive cerebral states, when the activity of all the functions is accelerated, sensory and mental

images may present themselves in such rapid order and from so many sources that they overlap and run together in confusion. In depressed states, on the other hand, images may be so slowly formed, and so faint in outline, and so few in number that all connection between them is lost and coherent thought becomes impossible. Sometimes, indeed, the whole cerebral energy seems to be concentrated upon a single image, as in ecstasy or rapture.

That mental soundness depends upon the integrity of the neurons and their branches seems to me to be established. But without going deeply into the discussion of so extensive a topic in this paper it seems to me fair to assume the truth of the proposition, and further to assume that the functions of so delicate a structure would be readily affected by any interference with its proper nutrition. And this does not refer merely to the more transitory changes in nutrition as seen in the delirium of fevers, which may clear up in a few hours or days, but also to the more lasting nutritional changes which underlie the acute insanities, and which differ from the former in no essential way. In the acuter and more lasting states of mental disorder the elements in question undergo damage, and their wholesale destruction appears to be the underlying lesion of all true dementia.

The first phenomena of delirium to discuss is *illusion*. Illusions are presentative representative errors. As already stated, the normal presentative representative cognition has a double origin; a presenting sensory image on the one hand, and an ideal image revived from memory by some associative process on the other. The likeness, unlikeness, or some other relation observed to obtain between the two is the cognition. Now in delirious states, in consequence of changes in the sensory mechanism, the presenting sensory images, as we have seen, are frequently distorted, and hence the relations observed will just as certainly be abnormal. These abnormal relations are illusions. Again when the power of association is compromised, consciousness seems no longer able to awaken the appropriate ideal images and bring the comparatively true sensory images into normal relation with them. Often this latter process seems to be prevented by the obtrusion of some vivid and predominating ideal image, which steps in between all presenting sensations and their proper ideal associates, as it were obscuring both and itself posing as the real presenting image. For example one patient interpreted the ticking of the clock as a torrent of abuse directed to him. This man spent much of his

waking time poring over his wretchedness and magnifying his evil deeds. Soon the clock and his thoughts struck step as it were, and consciousness confused or preoccupied, clothed the indistinct auditory images with this perpetually obtruding and only available item of his experience at the time, his own self-recriminations.

Often both the presentative and the representative elements are at fault. This is especially true in the acute forms of delirium. Here from the disordered and often hyperactive state of the sensory mechanism, a flood of distorted and fragmentary sensations pours into consciousness. Mental images are called up in the same hasty and haphazard way. Appropriate relationship is ignored and the most incongruous associations take place and are accepted. I have had a maniacal patient recognize me as a dozen different persons in as many minutes. Upon the imperfect sensory image of my face was projected every ideal face recalled into consciousness and accepted as the real presenting image. Plainly here the illusory product was due to the slovenly method of thought, and such product often disappears as readily as it arises. The more illusion is found to grow from a definite and persisting pathological basis the more persistent it is, and the more persistent it is, the more certainly can such a basis be assumed. Hence the value of illusion in prognosis.

A peculiarity of illusion is its occasional tendency to spread into the realms of other senses than the one primarily stimulated. One epileptic patient informed me that when a certain woman approached him she called up a complete image of his father. First her looks, then her gestures, then her voice, then her very words were his, and even the room was transformed into the father's home. Here upon a few outlines was developed a complete scene in which all the details and coloring were supplied from the patient's experience. A patient recently under my treatment says that when her room is silent she notices first a slight ringing in her ears. After a little time this takes the form of separate words or phrases which seem to her to come from a great distance. Then gradually these seem to come nearer and she recognizes them as the expression of her own thoughts. Then a second person seems to appear and she hears clearly a conversation carried on in her room in which the contents of her own mind are rehearsed in her ears.

Sensory image more or less defective, memory picture inappro-

priately or imperfectly called up, cognition false. That is the general formula of an illusion. Illusion then is a false interpretation of sensation, and if it rests upon a pathological basis it constitutes an element of delirium. If the fact be borne in mind that sound presentative representative thought consists in seeing clearly the relations that exist between presenting images and ideal images recalled from memory, the chances of errors resulting in states of disordered cerebral action, as well as their essential nature, will be appreciated.

Every delirious patient has illusions, and often the manifested mental phenomena, aside from confusion, consists of little else. Frequently all the special senses are perverted and the psychical contact with the physical is always through a distorting medium. Patients suffering from the various neuroses are especially prone to this error. The partially blind sufferers from middle ear disease, patients with nasal catarrh, or habitually coated tongues have a tendency to illusion for obvious reasons, and when the illusion is unilateral a corresponding one-sidedness of lesion is usually found to exist.

And here it is proper to note that I am regarding all stimuli passing into the sensory centers as sensations, whether originating in the peripheral nerve expansions or along the course of their trunks. This will bring many phenomena usually regarded as hallucinations into the category of illusions. To make the position or character of the object administering the stimulus to the nervous mechanism the criterion by which to judge whether illusion or hallucination results, seems to me to be unscientific and confusing. The flash of light seen when the eye is struck, and the ringing in the ears caused by inspissated cerumen seem to me to be just as sensory, and their psychical misinterpretation just as much illusion as the corresponding effects of light and sound could be. The makeup of the illusory phenomena is the same in both cases. Besides, as will afterwards appear, hallucination is quite a different thing. This will bring the many retinal, visceral, and the like disturbances under the head of illusions where they appear to me to belong.

As to relative frequency, illusions of sight and hearing stand first. This arises out of the fact that these two channels of sensation have the greatest psychical importance. A noteworthy point often observed in connection with auditory illusions is a change in the patient's tone of voice. It becomes like that of a

person partially deaf and is altered in timbre and pitch. Now the voice tone is regulated reflexly through the auditory centers, the ear guiding us in making its pitch, strength, etc., appropriate to the occasion. If the auditory mechanism is disordered it fails to do this with the results named. In some cases the patient hears his own words and expressions so imperfectly at times that they seem to him to come from the lips of others and thus form the basis of illusions.

Illusions of taste and smell are probably the next in frequency and depend upon alterations of the mucous membranes and secretions of the mouth, throat and nose. As is very well known very slight changes in the health cause corresponding changes in the tongue surface which not only originate foul tastes therein, but also compromise its ability to transmit the normal sensations of sapidity. Illusions here usually refer to poisoning or befoulment of the food, and they have a special clinical importance as explaining why certain patients refuse to eat, besides affording a valuable therapeutic hint. In a similar way foul breath may originate illusions of smell; or such illusions may depend directly upon disorder of the nasal mucous membrane.

Again that the sense of smell is altered in persons suffering from forms of delirium through which runs a strong sexual element cannot be doubted. The deliberate soiling of their persons and rooms so common in this class of cases can be explained in no other way. In the lower animals the bodily odors emitted are unquestionably sexual stimulants and in the human delirious subject it seems fair to assume that even the foul secretions might act in a similar way, especially when we remember that in the dejection of these from the body the sexual organs undergo more or less stimulation. One thing is certain, their appreciation of odors must be greatly changed, as no repugnance, but rather delight, is manifested by the class of patients referred to in an atmosphere reeking with urine and foeces. On the other hand certain of the same class manifest extraordinary cleanliness, taking baths whenever the opportunity affords, and washing the hands many times a day as if to remove some offensive smell. That illusions of smell point specially to disease of the frontal lobes as a general proposition I cannot affirm, but that such disease, tending as it undoubtedly would to involve the olfactory bulbs, would likely affect the sense of smell cannot be denied.

Tactile and muscular illusions are also common in delirious

states. Electrical twinges, the sensation of vermin on the skin or of animals in the viscera, pregnancy, violation, changes in the shape or power of activity of the body and the like are of this nature. Cases of syringomyelia accompanied by mental alienation often have very numerous and vivid tactile illusions.

Hallucinations. Hallucinations are representative errors. They are vestiges of former sensations revived and brought into abnormal prominence. In health as we all know, every thought is accompanied by a faint ideal image, and if attention be directed strongly thereto this image may be made to stand out in the boldest relief on the field of mental vision. The geometrician, for example, in the solution of difficult problems, is able to construct and see clearly the most elaborate mental diagrams of his work. Draughtsmen tell us that their drawings are often simply tangible copies of mental pictures every detail of which had been wrought out and entered definitely in the ideal. In health we recognize the origin and nature of these ideal pictures and dismiss them when we are done with them. But when mental action is impaired the patient seems no longer able to do this at all times or to distinguish them from presenting sensations. They are so vivid that they seem to be sensory images just registered and the mind accepts them as such. For this reason the melancholy mother, who has spent days and nights poring over the mental picture of her dead child, when roused from her reverie maintains that she has actually seen its face. She does so not from any sensation she has experienced, but because in the confused state of her mind she is no longer able to give this confronting ideal image its proper place in her experience. To her such vividness could only belong to an actual presenting sensation.

Hallucinations then are psychical images falsely referred to sensation. Whatever favors abnormal mental abstraction favors their evolution. Object consciousness must be weakened and there must be a corresponding rise in the consciousness of subjective phenomena. These conditions are especially marked in prolonged states of mental depression. Here the sufferer is so intent upon his painful emotions and the images of harm which he is accustomed to associate with pain that he is no longer able to distinguish what he dreads from what really happens, and in his confusion refers all to sensation. Often indeed, his contemplation of some painful image is so intense that he is oblivious

to all else. Fragments of former sensory images reappear faintly in the conscious field and unite, sometimes in the most incongruous way, until a more or less elaborate vision is constructed, and this becoming comparatively more and more distinct, its vividness finally exceeds that of sensation. The mind has no alternative but to accept it as sensory.

A word here on the phenomena of talking to self so common in all forms of delirium. As has been said, a mental plan or image precedes every act, and when this image becomes so definite that it covers the field of mental vision to the exclusion of all other images, so to speak, it must issue in an action. A series of word images accompanies all thought, and in children these issue unhindered in ceaseless and disconnected prattle, but in the normal adult inhibitory images also appear in the mental field enjoining us to think in silence. But when thought becomes intense, as in anger or despair, or when the inhibitory images are very feeble, as in drunkenness, or when we are alone, we frequently think in audible words. So in delirium the false mental product is so novel and so startling, and at the same time the inhibitions so enfeebled, that it bursts through the speech centers in the mumbling of the fever patient, the incoherent shouting of the maniac, the declamation of the excited paranoiac, or the babbling of the dement. Sometimes even in health we find the accompanying hallucinatory skeleton too faint to sustain thought, as for example when there is a distracting noise or when we are mentally weary. We then repeat our thoughts aloud so that we may make use of the more vivid auditory images. The same thing doubtless occurs in certain states of mental enfeeblement and for the same reason. Of course the fact has not been overlooked in the foregoing that in delirious states the inhibitions to speech are frequently strengthened rather than weakened.

Hallucinations thus differ intrinsically from illusions. They are fictions while the latter are only distortions. Illusions are false mental images arising out of sensation, hallucinations are mental images falsely referred thereto. Illusions may depend on changes in the sensory mechanism and may be unilateral, hallucinations have no real external relations at all. Inattention alone often accounts for an illusion, hallucinations arise only under intense introspection. Illusions are exceedingly common in all forms of delirium, hallucinations are much rarer and much less definite in outline.

As to relative frequency hallucinations stand in about the same order as illusions and for the same reasons. Those of hearing and sight come first and in the order named. These images are more definite than those of taste, smell and touch, and are therefore more easily called up. In fact I am not sure that I have ever seen hallucinations of these other senses. Nearly all thought is expressed in sounds and forms, and it seems fair to assume that vestiges of these make up the chief part of the mental framework. If it be possible to sharpen the registered vestige of any image until it apparently assumes the definiteness and vividness of a sensation here is where such a phenomena could easiest take place. The genesis of illusion on the other hand occurs much more readily, the abnormally acting mind frequently misinterpreting the most trivial sensation in terms of some dominating idea. Perversions of the special senses other than those of sight and hearing seem to me to be practically always illusions.

Delusions. Delusions are re-representative errors. As has already been stated re-representative thought rises highest above the sensory substratum. Hence its accompanying ideal framework is so intricate and delicate and so faint in outline that it is not distinguishable in and from the thought itself. Such a framework seems not to exist and we speak of concepts formed here as products of reason, abstractions, beliefs. Now it is in this sphere of belief that delusion occurs. But all error here is by no means such. Even in health and under the most favorable conditions, and after the most careful deliberation, perhaps most of our beliefs contain error, and some of them are absolutely false. Even erroneous beliefs of the insane are by no means necessarily delusional. There is nothing about delirium which prevents its victims from making mistakes. The essential thing about delusion as well as all other delirious phenomena is that it is a symptom of cerebral disease. However abstract it may be still it is rooted in the morbid sensory basis below, and unless such a relation is clearly inferable, no belief, however incongruous should be classed as delusion.

Delusional concepts will thus refer at least remotely to abnormal conditions in the patient himself. It is out of his own mental mechanism that those startling and perplexing phantasms arise and obtrude themselves into the normal flow of his thoughts. They enter into and pervert the very faculties that attempt to

explain them. If an effort is made to correct the resulting error, the intruding phantasms continue to present themselves and falsify the correction. The variancy between his present and his former self thus sooner or later forces itself upon the patient's attention. In hyperactive cerebral conditions thought flows with such unwonted ease and all ideation and action are so free and unrestrained that the individual feels that he has become a new and superior person. From this state it is manifestly but a step to false conceptions of personal importance. Or if on the other hand the mental and bodily functions are depressed, and increasing friction is felt in thought and action the individual finds himself in unfavorable relation with his environment. Its naturally encroaching tendency seems to him to have gained strength and he himself to have become less able to resist it. Manifestly out of this false relationship will arise fictitious beliefs of personal unworthiness and inferiority, and later delusions of persecution.

Now it is the effort of the crippled mind to explain this personal and relational transformation that constitutes the very source and essence of delusion. Delusions then are false beliefs regarding the morbid self and its altered relations to the environment originating in cerebral disease. And the word false as used here must not be taken to mean untrue. A delusion may be an easily verifiable fact. For example, melancholiacs practically always entertain the belief that they are incurable, and in more than fifty per cent. of the cases this proves to be true. In some of them at least their unfavorable prognosis is based on the assumption that they are unfit to live, and it is the falseness of this assumption that makes their belief false though true in point of fact. Their opinion bears the same relation to the disordered mental mechanism that the gray membrane bears to the diphtheritic throat. It is just the thing to expect under the circumstances, and is false only because unusual and abnormal.

The grouping of delusions around some central false conception is known as systematization. In the acuter forms of delirium this tendency may not be apparent at all, but it is evident and common in some of the more chronic forms. It finds especially favorable soil in the paranoiac in whom incongruous grouping of ideas is an inborn characteristic. As stated above delusions are attempts on the part of an individual suffering from disordered cerebral action to explain his morbid mental pheno-

mena. In this way he creates for himself a new status. The change which has actually taken place in him and thereby in his relation to his environment is still further distorted by his defective judgment.

Now it is when he goes a step further and attempts to explain this false explanation that systematization begins. Why have I changed? and why do people seem and act differently toward me? are questions which sooner or later confront him. Am I of sufficient consequence to change everything? If so, I must be very bad or very good or very great or in possession of some terrible secret to occasion this extraordinary attention. Manifestly the conditions favoring this widening of the range of false belief would be the retention of considerable power of deliberation and prolonged duration of mental disorder. In fact when systematization is shown to exist, these favoring conditions may as a rule be assumed to have pre-existed. And therein seems to me to lie its chief significance.

As to contents delusions show the widest possible range. They usually bear a pretty close relation to the patient's temperament and habits of thought in health. In the buoyant and boastful the expansive type is likely to prevail, and in the retiring individual the depressed type, for manifest reasons. Again etiological factors seem to have a determining influence sometimes, as is exemplified in the melancholiac whose derangement was caused by financial losses, and who now believes that not only he himself is utterly ruined but all his friends with him. Alcohol, opium, and cannabis indica produce forms of delirium which are more or less characteristic. Cerebral syphilis, and the lesions of paresis are followed by morbid mental conditions which are fairly typical.

Delusions of a religious tinge very seldom grow out of any former religious experience as is sometimes thought. They are much more common in patients who have led dissolute lives or are addicted to some sexual excess or perversion. They seem to stand in the same antithetical relation to experience, as the delirious pauper's belief that he possesses millions, and appears to be nothing more than the extension of a profound and dominating wish or fear into the delirious state. Illusions and hallucinations have a powerful influence over the false beliefs of insane persons. Why should not he who hears and talks with God believe himself to be a prophet? or he who tastes poison in his food and feels what appear to him to be electric wires piercing

his flesh have delusions of persecution by unseen agency? Then there is the conflict which of necessity soon arises between the deranged person and his environment. His whims are opposed, his claims are laughed at, he is checked here and there, and perhaps locked up. To him of course these actions mean persecution, and it is here to be noted that very often the persecutory ideas entertained by insane persons against their friends or relatives have at least some foundation in fact. I cannot leave this topic without again urging the legitimacy of delusion as well as all other delirious phenomena. They all arise from actually existing conditions, and it is the shrewd observer that is able to see through these symptoms to the pathological basis on which they rest.

Morbid impulse. As stated above, when a mental image of an act succeeds in occupying the entire field of consciousness it must issue in action. In health the range of consciousness takes in consequences, alternatives, and other inhibitory images along with the principal image and a process of deliberation takes place. There is a rational choice of the plan to pursue and the act is consequently rational.

But in mental disorder there is every variation from this normal standard. The stuporous dement, for example, may not be able to get the image of any act before his mental vision, and he sits with bowed head, wholly deprived of the power of volition. The hesitating melancholiac, on the other hand, may for hours hold a number of alternative images of action in mind, unable to focus or prefer any one of them to the rest. But in morbid impulse an image of some act obtrudes itself into the mental focus, often with great suddenness, obscuring all alternatives and consequences, and is immediately transformed into action. In post-epileptic fury, for example, an image of the act of murder may suddenly fill the patient's mind, and he may spring upon the first person he meets and kill him, the whole episode taking place subconsciously and without inhibitory opposition.

But suddenness in execution is not an essential attribute of impulsive action. The paranoiac may have the destruction of a fancied enemy in his mind's eye for months before carrying it out. By continued contemplation of some real or imaginary wrong he gradually conjures up a corresponding scheme of vengeance. In this effort he is frequently assisted by hallucinations, especially of hearing, and it is by no means uncommon for

him to claim that the voice of God approves and urges him on in his purpose. The absolute concealment of his plans and motives renders his act a surprise when it comes, and gives it the appearance of having been suddenly conceived and carried into execution.

The genesis of morbid impulses may perhaps be accounted for by assuming that some obscure morbid subjective sensation passes into the lower stratum of consciousness and there gives origin to a corresponding train of morbid thought which explodes in some violent action before it reaches the higher plains of consciousness where inhibition is the strongest. This certainly seems to be the case where the patient has no recollection of his impulsive acts. Here the higher consciousness was at least not brought into a sufficiently lively state to register the episode, and we can only infer either that the higher consciousness received no proper stimulation, or receiving it was too obtunded or pre-occupied to deal with it in the normal way. Such is doubtless the case in the impulsive acts of epileptics and drunkards. In the paranoiac checks to violent action give way more gradually but in the end there is the same obscuration of the intelligence and judgment and the same violent action the most prominent quality of which is its senselessness.

Incoherence and amnesia. Both these conditions are present in all forms of delirium. It is a mere truism to say that perfect coherence of thought, and faultless memory do not exist. As has been stated, mental weariness alone often materially affects the quality of both, and in toxic conditions the cerebral state is like that obtaining in weariness at least in the fact that the functional activity of the pyramidal cell and its branches is impaired.

But it is in the later and terminal forms of mental alienation that the faults in question seem to stand out so prominently. I say seem, because if the mental integrity be tested generally, the memory will be found to be fully up to the average of the other faculties. The memory is like the radial pulse, accessible, and a fair criterion of the whole system of which it is a part.

Study of the pathology of chronic alcoholism, in which the mental reduction is very great, shows a corresponding destruction of the pyramidal cells, especially of the frontal lobes. Assuming that it is these elements which receive and retain those impressions upon which is built the mental superstructure, manifestly their destruction would not only sweep away the impressions

they may have held, but would also break up certain of those lines of association which are traversed by consciousness in reviewing and calling up past experience. Equally important with these results is the reduction in the cerebral capacity for receiving and registering impressions. As the result of these conditions and in proportion to their severity not only is the memory compromised but also the power of coherent thought, of judgment and of initiative action, and the unfortunate individual may sink below the level of the unthinking animal.

As this paper is already too long, I must leave unconscious, subconscious and allied states for a subsequent article. I also have to omit the discussion of the pathology of the neuron, which of itself would fill the limits of a single paper.

THE REPORT OF A CASE OF PERFORATING THORACIC ANEURISM POINTING EXTERNALLY THROUGH THE STERNUM WITH NON-FATAL RUPTURE.

Read at the Meeting of the North District Branch of the New York Medical Association, Saratoga Springs, May 23, 1905.

By HERMON C. GORDINIER, M. D.,

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The object of this report is to refute the commonly accepted opinion that the rupture of an aortic aneurysm is always immediately fatal or fatal within a brief period of time.

Walsh states that perforation with or without oozing or slight pouring out of blood, may occur into parts of considerable importance, not only without immediately fatal results but without any perceptible effect; the occurrence of a sudden rent of any size completely through the wall of a sac, no matter with what internal part an unnatural communication be thus set up, is, however, almost invariably fatal. He reports the following case: A female, admitted immediately after a violent hemorrhage having the character of hematemesis, rallied, had three more attacks within thirty-six hours, dying instantly in the last. The stomach contained seven ounces of fluid blood and two coagula weighing twenty-three ounces. An aneurysm of the descending arch was

found communicating with the oesophagus, by an opening as large as a half crown.

Flint says that when the rupture of an aneurysm occurs the character of the opening, if it takes place into a serous cavity, differs from that upon a mucous surface or the skin, the serous membrane giving way or is torn by the force of the blood current; that is, the opening is a true rupture, whereas on the mucous surface or skin the opening is by a process of ulceration or small eschar. The difference just stated accounts for the fact that the patient almost always dies suddenly when the rupture is into a serous cavity; whereas death is sometimes preceded by repeated hemorrhages when the opening is upon a mucous surface or the skin. He gives the abstract of a case of profuse hemorrhage into the trachea from an aneurysmal sac which took place three months before the occurrence of a severe and fatal hemorrhage in the same situation, the patient in the interim being up and about, and traveling repeatedly by rail, distances of several miles.

Stokes refers to the case of Dr. Nelligan's, a ship carpenter with an aneurysm of the arch of the aorta opening externally about the level of the second rib on the right side in front, which for more than a year discharged blood at intervals, and that sometimes so copiously and in so full a stream as to be with difficulty arrested. Three weeks after the last bleeding, his aneurysm underwent a marked abatement and he left the hospital declaring himself to be quite well. Dr. Stokes also refers to two other cases in which the sac opened into the right pleura. The symptoms and signs were similar in both; each gush of blood being attended with collapse, and producing a dullness of the lower portions of the side, exactly corresponding to the amount and situation of the effused blood. In one of these cases there were two and in the other three distinct hemorrhages.

During the intervals the condition of each patient was good. The second case was fatal after the third hemorrhage. Dissection showed the whole right pleural sac filled with blood. The aneurysm had ruptured at the lowest part of the thoracic aorta.

Peacock reported a case where the descending arch was the seat of an aneurysm, the aneurysmal sac being composed of the upper lobe of the left lung. This case had repeated attacks of haemoptysis and died from rupture of the sac into the left pleura.

Professor Osler has reported two cases of non-fatal rupture of an aneurysm. Dr. Osler's first patient had a hemorrhage of two

quarts and three weeks later slight hemoptysis. This case was reported as cured eight months later. The second case was a man, who after one profuse hemorrhage lived four weeks, and then dropped dead, without further bleeding. At the autopsy an aneurysm of the ascending arch was found, a large part of the wall of which was made up of pulmonary tissue; the trachea not being involved. Death followed perforation of the aneurysm into the right pleural sac with internal hemorrhage.

Balfour declares that rupture of an aneurysmal sac is not always immediately fatal; rupture into a serous cavity usually is so, but there are many cases of so-called weeping aneurysm in which the sac communicates with some mucous surface and pours forth small quantities of blood at irregular intervals for months or years. He refers to the following case reported by Dr. Ramsey, of a man with aneurysm of the arch of the aorta and innominate artery which ruptured opposite the cartilage of the third rib. A stream of blood somewhat thicker than a crow quill is reported to have issued from the opening. The patient, nowise alarmed, held a bowl to receive the contents of what he supposed to be a bloody boil and even squeezed it with his chin to empty it faster; when he had lost about a quart of blood he fainted and the bleeding ceased. Four months subsequently he died of typhus fever, the bleeding having never recurred.

Ferrey, in the *American Journal of Medical Sciences* for July, 1905, recorded a case of non-fatal rupture of an aortic aneurysm into the lung, who lived two years and then died suddenly from a subsequent rupture. He also recorded eight other cases from the literature none of which I have included in this report.

Charles H. Melland in the London *Lancet* for November, 1904, reported a most interesting case of this sort, an abstract of which is as follows: The patient was admitted to the Manchester Royal Infirmary with the history of having brought up a large amount of blood while at work. He was collapsed, barely conscious, almost pulseless and absolutely blanched. He appeared moribund but as the hemorrhage had ceased, two pints of normal salt solution were injected into the basilic vein. He rallied and improved rapidly during the next three weeks. The heart was enlarged; there was dullness in the second left interspace just outside the edge of the sternum. There was no abnormal pulsation, but distinct tracheal tugging and inequality of the pupils were present. Three weeks after, he had another severe hemor-

rhage from which he rallied, but after three days' absence of bleeding, it was renewed and ended fatally. At the autopsy a saccular aneurysm was found, which arose from the convexity of the arch, about the size of a hen's egg. The trachea was compressed, macerated and softened and in this softened area there was a vertical slit, through which the bleeding occurred.

Gairdner, in his work on clinical medicine, refers to three somewhat similar cases. The first one was the celebrated surgeon Liston, who had a large hemorrhage from the mouth suggestive of a free rupture of an aneurysmal sac, but this was succeeded by a quiescent period of six months. At the autopsy the trachea was found to be perforated in several places, and the portions of the aneurysmal clot were discovered projecting through openings, blocking them, and thus preventing further hemorrhage. The second case he relates, had repeated hemorrhages into the air passages, during the course of nearly five years. The third one, two years before death, had a small rupture into the duodenum.

Hope, in his book on the heart and aorta, refers to a case of an aneurysm in which three successive ruptures were attended with syncope and convulsions. He makes no mention of the ultimate result.

Dr. T. W. Clarke in the Johns Hopkins *Bulletin* for March, 1905, has reported a case which appears to be unique in the occurrence of a series of large hemorrhages. A man, aged 39 years, came into the hospital, under the care of Dr. E. F. Cushing, on July 13, 1904, complaining of pain in the right chest, cough, and haemoptysis. There was a history of gonorrhœa and soft chancre but not of syphilis. The patient dated his present illness from a year before his admission, when he began to have discomfort in his chest, especially on his right side, dyspnœa, dizziness, tinnitus, and attacks of weakness. His general condition became worse until two weeks before his admission when he began to cough and expectorate small quantities of blood. The pain in the chest grew more severe and on admission extended to the right shoulder and down the right arm to the elbow. On the day of admission profuse hemorrhage occurred. On examination he was found to be a muscular man, coughing frequently and expectorating considerable quantities of blood-stained mucus. The voice was husky but not brassy. The left pulse seemed slightly fuller than the right. There was a slight tracheal tug. In the first, second and third right intercostal spaces there was a visible pulsation but no

bulging. Over the pulsating area a slight systolic impulse, followed by a diastolic impact, was felt and dulness was present. In the back dulness extended from three centimeters above the angle of the right scapula upwards for eight centimeters. Over the right upper chest were heard a diastolic shock and a loud friction rub synchronous with the respiration. Aortic aneurysm was diagnosed. After the second day the bleeding stopped and the cough and pain were greatly relieved, but on July 23rd four ounces of almost pure blood were expectorated. This was the beginning of a remarkable series of sixteen hemorrhages. The patient, in the next seven and a half weeks lost over fourteen pints of almost pure blood. The hemorrhages came on after some exertion or excitement, lasted only a few minutes, and were accompanied by paroxysms of coughing. They were stopped by the administration of morphine, as much as a grain being sometimes required. The patient became steadily paler and in the first month the red corpuscles fell from 4,864,000 to 2,304,000 and the haemoglobin from sixty-five to thirty-eight per cent. On September 15th, during a fit of anger, the patient sat up in bed, became very weak, broke out into a cold sweat, and said he was dying. He died in about twenty minutes. During the last few days of life there were signs of fluid in the right chest. At the necropsy 3,000 cubic centimetres of dark blood-tinged fluid and flakes of fibrin were found in the right plural cavity. The aorta throughout was the seat of a number of large and small irregular thickened areas which projected slightly into the lumen. On the right side three centimetres above the valves was an oval opening two and five-tenths by one centimetre in diameter leading into a spherical sac nine centimetres in diameter filled with laminated fibrin. The sac was covered by, and adherent to, the pericardium and the pleural cavity. Small bronchi could be traced into the sac but no blood was found in the air passages. The repeated haemoptysis was evidently due to these small communications which ordinarily were plugged by fibrin. On exertion the fibrin no doubt shifted, giving rise to hemorrhage.

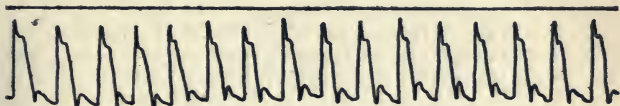
AUTHOR'S CASE.

E. C., aged fifty years, male, gambler by occupation. Consulted me October 12, 1904. His father died of sunstroke; mother of pneumonia. Lost two brothers in childhood. Had a primary sore on penis twenty-five years ago, followed by an eruption, for which he was treated three months and pronounced cured. Since that time he has had no symptoms.

Status Praesens. Present illness began three years ago with soreness and pains in the shoulders and neck. Soon after there developed a terrible pain of a grinding, boring character, beneath the upper part of the sternum. This pain was often induced and greatly exaggerated by efforts of swallowing. He has no dyspeptic symptoms. He has shooting pains in both arms rather more severe in the left. He has no cough, brassy voice, dysphagia, headache, dizzy or faint attacks. His appetite is good, digestion is normal.

About one year ago the patient noticed a pulsating swelling, which has increased gradually in size, in the upper part of his chest. He states that since the swelling as he terms it, has pointed, he has had no severe pain in the chest and the act of swallowing does not induce pain.

Physical Examination. He is a rather tall man, delicately built, with flabby musculature and slight general emaciation. His expression shows



A SPHYGMOGRAM OF THE LEFT RADIAL ARTERY



A SPHYGMOGRAM OF THE RIGHT RADIAL ARTERY

the evidence of one who has suffered severe pain. The extremities are free from oedema, but feet cold. The right radial artery is difficult to palpate, its volume is very small. The left radial is easily felt, and well defined. The walls are thickened, the volume is fair and the artery is somewhat difficult to compress. The rate of the pulse is 108 per minute. The volume of the right carotid, subclavian, and axillary arteries is much less than that of the opposite side. The pulse is also delayed. Arterial tension taken with the Riva Rocci instrument shows the tension in the left arm to be 160 mm.; in the right arm 80 mm. Sphygmographic tracings of the radial arteries show well marked differences. The temporal arteries are tortuous and thickened. The veins of the neck empty in a normal manner with no pulsation in them. The veins of the chest are not appreciably enlarged. A tumorous-like mass, expansile in character, occupies the whole upper half of the sternal region, and extends laterally into each infra-clavicular and slightly into the inner portions

of each supra-clavicular regions; the clavicles are prominent. The mass is irregularly quadrilateral in shape, convex, and presents, near its middle portion, a transverse groove which serves to divide it into two parts. The larger part occupies the upper sternal and clavicular regions and is distinctly elevated. The smaller part occupies the middle half of the sternal region and is conical in shape and higher than the other part of the tumorous mass. The pulsation of the entire mass is very plainly seen, is distinctly expansile and is synchronous with the apex beat. There is a distinct diastolic shock. The sac appears to be covered with skin only. The much wasted subcutaneous tissue is so thin that it looks as if it might burst at any moment. The overlying skin is of a dark purple color and shows two or three excoriations, like minute trophic ulcerations caused by pressure and possibly skin infection. The mass is elevated six centimetres above the level of the surrounding chest wall. Distinct pulsation is present in the epi-sternal notch. Tracheal tugging is well marked. A rough systolic murmur over the sac is to be heard conducted into the vessels of the neck. No diastolic murmur or thrill exists.

Heart. The apex beat is downward and outward, it is located in the sixth interspace, three centimeters outside of the mammillary line. The heart sounds are normal, and are quite as well heard over the sac as at the apex. The aortic second sound is accentuated. No adventitious sounds. The cardiac dullness is so continuous with the tumor mass that it could not be differentiated from it. Below it is continuous with the left lobe of the liver and extends to the left, almost to the anterior axillary line.

Lungs. Negative, save signs indicative of moderate emphysema. No internal pressure symptoms.

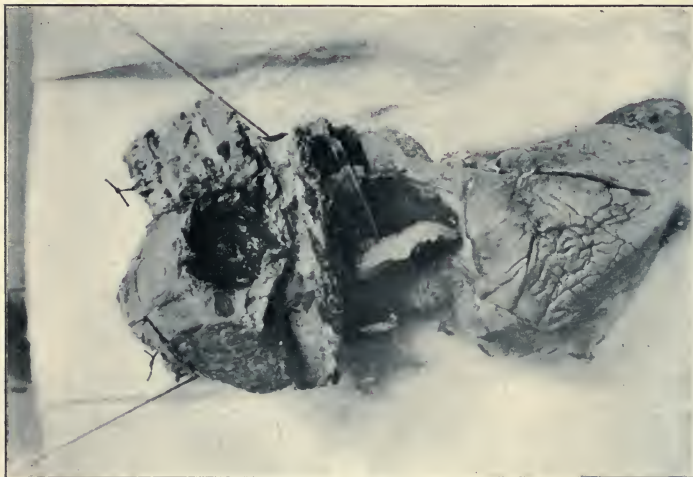
Nervous System.—Gait normal. Reflexes normal. No Romberg. Pupils equal and respond to light and accommodation. Cranial nerves all intact. Urine: specific gravity 1.010, trace of albumin, hyalin, and granular casts.

On the morning of October 20, 1904, the aneurysm ruptured externally, with great loss of blood, completely saturating the entire bedding. He lost consciousness and was pulseless. After a hypodermoclysis, consciousness returned and the pulse became faintly perceptible. Dr. Ferguson, who was close at hand, passed two sutures around the opening and succeeded in stopping the hemorrhage. October 25, 1904, he seemed much improved, pulse was of better character, but intermittent. He complained of some cough and difficulty in swallowing. He was unable to take much nourishment and felt much exhausted. October 26, 1904, swallowed with great difficulty and was very weak. During the night a hemorrhage occurred, less severe than at first, which continued until death at 8.30 A. M., October 27, 1904.

AUTOPSY BY DR. H. W. CAREY. Length of body 150 cm. Well-developed but somewhat emaciated man. Rigor mortis absent. Post mortem lividity over the back. Pupils equal and dilated. A little to the right of the sternum, about midway between its extremities is an excoriated mass of skin 1×1.5 cm. in diameter. Blood exudes from this area. Its borders are undermined and it communicates with the tumor about to be de-

To Illustrate Dr. Gordinier's Article on "Perforating Thoracic Aneurism"

Albany Medical Annals, September, 1905



Showing opening in sac corresponding to point of perforation



Showing interior of sac partially filled with fibrin

scribed. The tumor extends, in height 4 cm. above the level of the thorax and measures 10 x 9 cm. The sternum has been destroyed in its upward growth and the clavicles have been pushed and apart by it. When the skin covering this tumor is dissected off, a rupture into the tumor is found 4 x 3.5 cm. in diameter. The tumor is hard and firm and is firmly attached to the adjacent ribs. The abdomen is soft. No oedema of feet or legs.

Heart 13 x 9 cm. Both layers of the pericardium are smooth. There is a small excess of fluid in the sac. The right auricle is dilated and the left ventricle is hypertrophied, measuring 2.5 cm. in thickness. The musculature appears normal. The valves are all thin and delicate. The coronary arteries are atheromatous but not obstructed. Immediately above the aortic orifice, the aorta widens quickly to a diameter of 6 cm. and curves slightly to the left. The aorta extends 6 cm. upward at the same diameter. Just at the junction of the ascending and transverse arch of the aorta a globular dilatation begins with an approximate diameter of 5 cm. Its long diameter is 10 cm.; 4 cm. of this is above the level of the ribs, forming the tumor mass above described. The clavicles and first and second ribs and sternum are eroded by the pressure of the growth. The large vessels, common carotids, innominate, and axillary arteries run in the border of the mass but are not much compressed. The right pneumogastric nerve is displaced to the right from its normal position. On section into the growth the opening from the aorta is circular and about 4 cm. in diameter. On section of the sac it is found to be entirely filled with firm lamellæ of fibrin, and the large arterial branches of the aorta on the right side are completely obstructed by it. The transverse and descending arch of the aorta shows an extreme grade of arteriosclerosis. Only 1 mm. of arterial wall bounds the mass protruding from the skin.

Lungs show healed apical tuberculosis and a moderate amount of emphysema.

Trachea is compressed to about one-half its diameter. The compression is from before backward.

Peritoneum is normal. Appendix is normal. Spleen is normal. An accessory spleen 1 cm. in diameter, situated below, was found.

Liver and gall-bladder are normal. Kidneys appear normal. Bladder, prostate, and ureters are normal.

Anatomic Diagnosis. Aneurysm of the ascending arch of the aorta with erosion of the ribs and sternum and displacement forward of the clavicles and rupture of the skin over the sternum. Dilatation and hypertrophy of the heart. Atheroma of the coronary arteries. Chronic fibroid pleurisy at both apices. Healed tuberculosis of right lung. Compression of trachea. Accessory spleen.

Microscopic Examination. Sections of lungs, spleen, kidney and liver show an obliterative end-arteritis and chronic fibroid change. The prostate, bladder and seminal vesicals are normal.

Macroscopic Diagnosis. Aneurism of the ascending arch of the aorta with erosion of the ribs and sternum. Displacement forward of the clavicles, and rupture through the skin over the sternum. Dilatation and

hypertrophy of the heart. Atheroma of the coronary arteries. Compression of trachea. Chronic fibroid pleurisy at both apices with healed tuberculosis on the right side. Chronic interstitial splenitis and accessory spleen. General obliterative endarteritis. Chronic interstitial nephritis.

The author's case together with the cases reported by Stokes and Balfour are the only ones recorded in literature of non-fatal rupture of thoracic aneurysms which had pointed externally.

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END RESULTS IN SURGERY OF THE KIDNEY, BASED ON A STUDY OF NINETY CASES, WITH 123 OPERATIONS.

Read by Abstract, Fifteen Minutes, and Closing the Discussion, Five Minutes, at the Meeting of the American Surgical Association. San Francisco, California, July 5, 1905.

By ALBERT VANDER VEER, M. D.,

Professor of Surgery, Albany Medical College, Albany, New York

This paper is based on a review of about ninety cases of lesions of the kidneys requiring surgical intervention, and occurring in my own practice. I have been able to trace each patient to a fairly correct final result; many cases occurred at a time when the development of renal surgery was progressing along lines of intelligent investigation and safety regarding the various operations called for. The writer is thoroughly cognizant of the early criticisms made in reference to the diagnosis of movable or floating kidney and final reference to the surgical side for permanent relief. In the years past the marked symptoms associated with this lesion, all of which are at present grouped under the name of Dietel's crisis,

were formerly explained in some other manner than the true recognition of a kidney lesion; and while I have treated many cases successfully with rest, the abdominal bandage and kidney pad, yet I am frank to say that I have great respect for the operation of nephrorrhaphy; that it is comparatively safe and results in radical comfort and permanent relief.

The first group here presented is made up of cases in which there was marked evidence of a movable or floating kidney, four of the latter being very positive, as the kidney could be found and moved to any portion of the abdominal cavity. A number had been intelligently treated medically for periods ranging from three months to a year, yet without relief, and were finally brought to an operation. There were twenty-three cases: exclusive of those where an incision of the capsula, for nephralgia, examination for stone, and decapsulation for Bright's disease was done. It is interesting to note that nineteen of these occurred in the female, about two-thirds of whom were married, the lesion being on the right side; there were four males, the lesion also occurring on the right side, and the entire number recovering. In a review of this group I desire to present a few of the most striking cases.

Mrs. B. B., aet 53, admitted October 23, 1901. Nephrorrhaphy; nephrectomy nearly four years later.

Diagnosis floating kidney, right side, very marked. Urine a high specific gravity, trace of albumin and pus, but no casts. Later there were granular and epithelial casts. Usual nephrorrhaphy, patient making a good recovery, continuing, however, to have pus in urine for two years after operation, but since then in good health, able to take long walks, and kidney felt in normal position. April 19, 1905, she suffered from severe attacks of pain in right side, sometimes extending down course of ureter. Urine practically normal at times, then large quantities of pus and epithelial debris, especially following an attack. May 29, 1905, severe attack of renal colic; temperature 104, and pulse rapid and small, with marked distension of right side, pain radiating towards bladder. Diagnosis made, by her attending physician, Dr. Ward, of pyonephrosis, with obstruction of ureter, probably due to a deposit of muco-pus, or, possibly, a renal calculus. Segregation of urine, by Dr. James Vander Veer and myself revealed the fact that no urine was passed from right kidney, but discharged freely into tube from left. Nephrectomy advised and performed June 11, 1905. Kidney found in excellent, firm, fixed position, but much enlarged with small elevations covering cortex, some seemingly cystic to the touch. An abscess, size of an egg, located in pelvis of kidney, was ruptured in pushing aside the perinephritic fat, and a small, cone-shaped calcu-

lus found at mouth of the ureter. Exploration of ureter failed to reveal further obstruction, and was tied off low down. Silk used for pedicle, and chromocised catgut ligatures for vessels; large, straight rubber drainage tube inserted. Patient has done nicely since operation. I present the following specimen, and pathological report from the Bender Laboratory, made by Dr. Pearce: Anatomical diagnosis—chronic diffuse nephritis. Reparative changes in capsule of kidney due to former decapsulation and fixation. Nephrolithiasis. Acute suppurative pyelonephritis. Diffuse hemorrhage of kidney.

NOTE—Histological examination confirms the anatomical diagnosis of chronic diffuse nephritis and acute pyelonephritis, with hemorrhage.

Mr. W. F. K., aet 23, admitted November 29, 1901. Patient had suffered from agonizing attacks of pain in right lumbar region, and urine contained blood.

Nephrorrhaphy; patient made a good recovery, and kidney remained in normal position, the urine improving rapidly, but two months later he had an attack of acute appendicitis, requiring immediate operation. Kidney then found in excellent position and patient well at present.

Mrs. S. P. O., aet 40, admitted March 25, 1902. This was rather a remarkable case for diagnosis. The attacks of pain were so high up there was some doubt as to whether it was not gall-bladder trouble, but final diagnosis of floating kidney prevailed, nephrorrhaphy done, diagnosis confirmed, and patient in fine health two years later.

The following is a somewhat remarkable case:

Mrs. H. W., aet 28, admitted January 28, 1903. Diagnosis floating kidney right side. She presented several pathological conditions. In September, 1902, had had appendix and right ovary removed, but pain continuing she was advised to enter the Albany Hospital. Exploratory incision February 2, revealed a hypodermic needle penetrating into peritoneal cavity, and removed from right side. Stump of appendix, right ovary and tube, in normal condition. Bi-cornate uterus discovered and movable kidney, right side.

Nephrorrhaphy, February 17, 1903; good recovery, and patient in excellent health two years later.

Mrs. M. H., aet 33, admitted December 28, 1904. Diagnosis movable kidney right side. Usual nephrorrhaphy; patient made a good recovery, but May 15, 1905, she presented at my office with all the marked symptoms of cholecystitis, with accompanying intestinal indigestion. She is, however, free from her old distress in right side.

Mr. J. S., aet 26, admitted February 28, 1905. Diagnosis movable kidney right side. Nephrorrhaphy with good result. Patient passed through typhoid fever after operation, but four months after in excellent condition and kidney in good position.

Mrs. F. H., aet 31, admitted March 1, 1905. Nephrorrhaphy, later appendectomy and cholecystotomy.

Family history negative. Patient has had throat, menstrual, and gastric

trouble, also jaundiced at times, and given medical treatment at various hospitals, with dilatation and curettage February, 1903, for excessive menorrhagia, with good result. Later pain in right side referred to floating kidney, pad applied, but no improvement, and April 1, 1905, nephrorraphy done. Kidney found small and very movable. Good result followed this operation, but some three weeks later she suffered from an attack of gastric pain, intermittent in character, and all the symptoms of cholecystitis associated with acute symptoms of appendicitis. Operation revealed a catarrhal appendicitis, and a single stone impacted in cystic duct. Patient has made a good recovery from her many ills, although biliary drainage still continues.

The study of abscess of the kidney as a surgical lesion, and the classification under the headings of pyelitis, pyonephrosis, pyonephritis, or ascending pyelonephrosis, presents a most impressive view of the subject. With the improved methods of examining the pelvis of the kidney, through the urinary secretions, either by means of cystoscopy, catheterization of the ureter or segregation of urine, an early diagnosis should be reached, and it is unlikely that the cases marked by large pus collections will present so forcibly to the surgeon in the future as in the past.

Of nephrotomies there is a total of 24, as follows:

Male, right side, 2 recovered.

Male, left side, 6 recovered; 1 died.

Female, right side, 9 recovered.

Female, left side, 6 recovered.

Nine of these cases finally required nephrectomy, one of the latter resulting in death. Of the remaining 15 cases all made good recoveries but two, after a period of four years, one having a very slight sinus, not deep, no pus in urine, and patient in excellent health, this being a horseshoe kidney, the other patient yet in ill health from late secondary pelvic abscesses.

The following case of tumors of the prostate and pyonephrosis, right side, with nephrotomy, I think worthy of note:

Mr. E. S. W., aet 60, admitted September 19, 1902. Much pain in right side and chronic enlargement of prostate. Catheter employed for past five years, instrument probably not always in an aseptic condition. Patient a very active business man, who for a number of years failed to empty bladder within a reasonable time, until atomy was established. On admission to hospital he had severe pain in right side; chills; prostration; high temperature; fluctuating mass in connection with right kidney. Urine foul, very offensive, a great amount

of pus, but no casts. Much trouble in passing soft catheter and silver instrument used. Rectal examination: Very large prostate, with possible growth within gland. Washing out bladder afforded some relief, although blood followed at times.

Nephrotomy October 2, 1902, with an escape of a large amount of pus drainage. Patient did fairly well at first but died on the 11th day from sepsis.

"Autopsy by Dr. Blumer showed excellent drainage. Impossible to have removed kidney because of adhesions. Phlebitis of right leg. Everything in an unusually clean condition. Left kidney much enlarged with many abscesses—a true type of surgical kidney."

I have never seen a larger growth than was connected with the right lobe of prostate, microscopically malignant; in left lobe a growth the size of a turkey's egg, but isthmus presented no marked obstruction, probably accounting for the ease with which he passed catheter. An early operation might have done this man much more good.

Mrs. H. K., aet. 58, admitted September 28, 1902. Diagnosis pyonephrosis, right side. Past two years has had attacks of pain and vomiting, since August being confined to bed, with elevated temperature most of the time. Very marked swelling below ribs, in axillary line, tender and fluctuating on palpation.

Usual oblique incision; kidney opened, evacuated of pus, cavity washed out, T-drainage tube inserted, and one piece of iodoform gauze tampon. Patient eventually made a good recovery, with marked improvement in urine immediately following operation, and is now well.

Mr. R. R., aet. 26, admitted April 20, 1903. Diagnosis cystitis, double pyelitis, pyonephrosis, and surgical kidney, right side.

Patient gave a history of constant, sharp, localized pain in right side, with specific urithritis four months previously; chills and fever, with much pus in urine. Under careful medical treatment, and washing out bladder, patient improved somewhat, but later there was a great increase of pus in urine, with pain on left side. After consultation with Dr. Macdonald, and Dr. Lange, of New York, I made an exploration of right kidney, incising down to pelvis. Some pus discharged, and small T-drainage tube placed in position. Discharge quite profuse at first, then lessened, pus in urine much smaller in quantity, but left kidney enlarged, with marked tenderness. This condition abated, however, drainage tube removed, sinus healed, and kidney remained in good condition. Patient heard from recently. Has gained in flesh, urine clear, and symptoms abated. Since writing above a letter from Mr. R., who is abroad, states that drainage tract, in connection with right kidney, had to be reopened and there was free drainage, but he was doing well otherwise.

Of the cases of nephrectomies by lumbar incision, for pyonephrosis, there were eight, as follows:

Male, right side, 2 recovered.

Female, right side, 3 recovered.

Female, left side, 2 recovered; 1 died.

It is proper to state that these cases did not present so serious a condition as the ones in which it seems best to do a nephrotomy first.

The following illustrate a few of the cases contained under this heading:

Mrs. M. W., aet 36, admitted February 3, 1894. Diagnosis pyonephrosis in left side. Patient in a very serious condition and immediate operation decided upon. Usual nephrectomy. After operation right kidney continued to secrete a good, fair amount of urine, but patient showed signs of peritonitis, with vomiting, not controlled at any time, and died two days later. Perhaps here nephrotomy would have been better.

Mrs. F. F., aet. 37, admitted November 12, 1900. Diagnosis uretero-vaginal fistula; surgical kidney right side. In 1893 patient had a double ovariectomy; in 1896 vaginal hysterectomy for carcinoma, and in 1897 another operation for repair of a recto-vaginal fistula. Urine discharged through vagina after 1896, relieved for a few days, then returned with marked pain in region of right kidney. Tumor could be made out at times. Nephrectomy, November 14, 1900. Kidney very difficult to find, being situated way up under diaphragm, and cystic in character. Cysts evacuated, kidney removed, pedicle very short, wound packed with two strips of iodoform gauze; clamps left on pedicle, and removed at the end of 72 hours. Patient made a good recovery and has remained well since.

Regarding removal of the kidney by transperitoneal incision I have found it an exceedingly easy and convenient way of removing a large cyst or semi-solid tumor, the patients doing well afterwards. Of these there are four cases, referred to later under their respective classification.

Mrs. A.B., aet. 34, admitted February 6, 1904. Diagnosis hydro-nephrosis, left. Patient discovered tumor in left side of pelvis after delivery, three years ago. She was very large at time of delivery. Five months later passed large quantities of urine containing dark amber colored material. Reduced in waist measure from 34 to 28 inches after this, felt much better and did well until June, 1903, when she was seized with pain in left side and vomiting, later continuing almost constantly for a week, with chills and fever, and more or less ill after this.

Median incision to clear up diagnosis as to tumor originating in pelvis or in connection with kidney. Uterus and appendages found normal. Large tumor found occupying whole of left side of abdominal cavity. Trocar introduced and most of contents withdrawn. Posterior layer of peritoneum incised, vessels ligated and kidney removed. On

examination mass a pyonephrosis, with a good-sized stone in pelvis of kidney. Patient made a good recovery, remaining well since, all of her functions being performed in a normal manner.

There were two cases of hydronephrosis, probably due to movable kidney, in young women, entirely cured by simple aspiration.

Of nephrotomies, followed later by nephrectomies, there were nine cases, as follows:

Male, right side, 2 recovered.

Male, left side, 1 recovered.

Female, right side, 3 recovered.

Female, left side, 3 recovered.

Mrs. C. I. S., aet. 37, admitted November 3, 1895. Diagnosis pyonephrosis, right side. Patient had nephrotomy performed at her home one year ago, drainage continuing since. Never in good health, pain radiating down right side, usually lasting two hours, when she would then vomit and feel relieved. Paroxysmal attacks occurred at greater or less intervals for many years. Married at 23, and has had two children. Improvement took place under local treatment, and she left the hospital March 21, 1896, returning, however, in October of the same year, with same history of pain, and nephrectomy done. Patient a very fleshy woman. Kidney embedded in a mass of adhesions, hard to reach and removed piecemeal. Uninterrupted recovery. February 1, 1897, returned to hospital with lumbar fistula, which was treated successfully, and she left in splendid condition, remaining so since.

Mr. C. E. H., aet. 58, admitted May 2, 1898. Diagnosis pyonephrosis, left. Specific urethritis thirteen years ago, with cystitis two years later. Bladder washed out and sounds passed. Perineal section for intractable cystitis. Kidney opened and drained January, 1898, drainage continuing, with considerable urine mixed with pus. Two weeks ago unbearable pain, left side, also some in right, and much pus in urine. Perineal opening still present. Usual nephrectomy, patient recovering fairly well from operation, but dying later from multiple abscesses of right kidney.

Mr. F. H. W., aet. 53, admitted November 26, 1898. Diagnosis pyonephrosis, right. Right side aspirated a few months previously and pus removed. Presented with chills, high temperature, pain in back and abdomen, vomiting, scanty, high-colored urine. Usual nephrectomy, clamps removed at end of 72 hours. Patient made a good recovery, remained well for five years, suffering for two years from lumbar hernia, relieved, however, by abdominal bandage and pad, but died suddenly in a jaundiced condition, probably due to gall stone perforation.

Mr. G. R., aet. 27, admitted June 28, 1899. Diagnosis pyonephrosis, right. Illness began seven years ago, severe pain in right lumbar region, at first occurring about twice a year, later more frequently and severe, extending down ureter and to scrotum. He had acquired morphine habit. Nephrotomy, under ether, patient remaining comfortable for some few months, but finally obliged to submit to nephrectomy. Clamps used, good recovery, and well five years after operation.

Mrs. H. W., aet. 60, admitted July 11, 1899. Diagnosis pyonephrosis, left. Much soreness in side two years ago. Passed renal sand fourteen years ago. At times there is enlargement in left lumbar region and abdomen, with vomiting and irritation of bladder. Pain diffuse, not, however, following ureter to labia. States she has always had some kidney trouble. Mother of seven children and an unusually active woman. Nephrotomy necessary July 12, 1899, patient in a collapsed condition, but made a good recovery, in general health; however, drainage continued and kidney painful at times. Readmitted November 17, 1899, nephrectomy; clamps removed at end of 48 hours. Uninterrupted recovery and well at present time.

Mrs. H. M. B., aet. 35, admitted November 20, 1899. Diagnosis abscess of right kidney. Patient had an operation on right kidney six years ago, at her home, when drainage tube was introduced, and left in several months, the discharge continuing. Tube removed, but discharge continued, and sinus formed, finally healing. Three weeks ago seized with severe pain right side, swelling appeared, and later opened by home physician, but discharge continued.

Nephrectomy; wound healed nicely and patient well when last heard from.

Miss K. S. S., aet. 31, admitted April 1, 1902. Diagnosis pyonephrosis, left side. History of cystitis and menstrual trouble; dilatation and curettage, but condition not relieved. Bladder washed out. Many attacks of pain, left side, with much pus in urine. Kidney aspirated at patient's home; much pus evacuated and an earnest effort to remove kidney, but so adherent, and her condition so unfavorable, cavity opened, packed with iodoform and rubber drainage. Good result for a time, then old symptoms presented, much pus in urine, irregular menstruation, and sacculated kidney removed, clamps being used. Marked improvement; urine normal, a gain in weight, but later developed a pelvic abscess, which was drained through right incision, low down, above Poupart's ligament. Improvement for a time, but at present, while there is good drainage, and sinus washed out thoroughly, she is gradually failing.

Mrs. M. V. B., aet. 57, admitted January 21, 1903. Diagnosis pyonephrosis, right. She came to my office January 12, in so serious a condition I was glad to get her home without a collapse. Temperature 103, pulse 130. On admission to hospital she gave the following history: Cystitis ten years ago, supposedly cured. Present illness

began September 1, 1902. Pain in right lumbar region; swelling near spine size of an orange. Nephrotomy October 3, 1902. Large amount of pus evacuated and T-drainage tube inserted; one week later patient became delirious and removed to Pavilion F, for mental condition, under Dr. Mosher's care. She remained about the same for ten days, recovery then ensued, there was a free discharge and nephrectomy done April 16. Rather difficult on account of numerous adhesions. Marked improvement in urine followed operation; sufficient in quantity; wound healed very slowly but ultimate good recovery and in health at present time.

Mrs. H. D., aet. 40, admitted October 4, 1904. Diagnosis perinephritic abscess. Patient previously in hospital with pyelitis, much pus in urine, enlargement of left kidney and abscess. Nephrotomy and drainage, condition precluding nephrectomy. Patient improved; a slight sinus remained, which closed only intermittently, with pus and free discharge occurring. During past year much pain, with occasional fecal discharge. History of tuberculosis, but no cancer in family. Eighteen years ago, after birth of first child, passed small stones in urine. She now has two distinct sinuses; one backward towards spine, the other downward, communicating with large intestine. Nephrectomy. Every portion of remaining left kidney dissected out with much difficulty. Diseased areas removed; opening in intestines located just above sigmoid flexure, posteriorly. Edges freshened and brought together with silk sutures. Usual drainage. Patient discharged in greatly improved condition. Two silk ligatures have since worked out of sinus, and a limited amount of fecal discharge for a short time, but patient now in excellent condition. Laboratory report: Chronic suppuration, involving kidney; granulation tissue of sinus.

It will be noted that all of these cases recovered from the two operations, and with the exception of Mr. H. and Miss S., remaining well, he dying a few months later, as stated, from multiple abscesses of remaining kidney, and she, while still alive, gradually losing ground.

(To be continued.)

Editorial

Hawes exploded in an oath, "You humbugs of doctors couldn't speak plain to save yourselves from hanging."

There was some truth in this ill-natured excuse. After fifteen years given to the science of obscurity, Mr. Sawyer literally could not speak plain all in one moment.

It is Never too Late to Mend.

CHARLES READE.



English as She
is Wrote

The ANNALS has received the following comment on the King's English, as used in its pages, the publication of which is not out of place even in a special medical journal:

"I suppose that really the greatest shock I have had lately has come from my reading of the ANNALS. When I found on page 244 of the April number that the physician in charge of the celebrated Pavilion F had written a sentence in which occurs the expression 'to so tabulate' I was somewhat astonished, but immediately came the further regret that the editor of the ANNALS, who, as I happen to know, reads his own proof, had allowed the expression to pass unmolested and it seemed almost as though the cause of good English had been lost in Albany. And yesterday I had what would have been the pleasure of receiving a letter from the editor if it had not been that he, entirely without thought or care of the sensitiveness of my feelings, used the expression: 'to fully appreciate.' Now, I suppose that there is really no more offensive, and at the present time dangerous, foe to the purity of our language than the so-called 'split infinitive.' We see it everywhere obtruding itself until there seems to be absolutely no escape from its disagreeable presence; the President uses it in his annual messages to Congress, and seemingly no writer of modern days is capable of resisting its bewitching and alluring charms. Yet, in some blind sort of way I had clung to the idea that it would never be seen in the places where I had always been accustomed to look for the best producible English. Please stop my subscription to the ANNALS if this is to continue, for I can't afford to have the purity of

my style affected by such an utterly unworthy connection as this."

The ANNALS receives this merited rebuke with meekness. Long accustomed to the labor of revising the manuscript of others for the press, a spirit of pride may have gradually worked its way into the sanctity of the editorial office. And pride always has a fall.

But if the split infinitive has escaped the shears, the blue pencil and marginal *dele*, there are many other offenses which have not.

The liberties taken with rhetoric under the banner of science are a source of never ending amazement. This license is particularly glaring in the splitting up of sentences. It appears to be assumed that a succession of adjectives and nouns without prepositions, conjunctions or verbs, is sufficient to convey an idea, and that the precious time of physicians need not be wasted in the reading of a complete sentence. Instances of this are so numerous, especially in reports of cases, that illustrations are not needed. Punctuation is fast becoming a lost art.

There is no valid reason why scientific writing should not be done in correct English. The Annals regrets that such a barbarism as the "split infinitive" should have crept into its pages and its official letters. The comment of the critic is so terse as to deserve the notice of readers. The rule may be laid down not to hurriedly write so as to inadvertently or ignorantly permit this barbarism. To carelessly divide an infinitive is as offensive to the eye as the use of a preposition to end a sentence with.

Scientific Review

ANTISTREPTOCOCCIC SERA

Besredka¹ in a critical review entitled "Does there exist one or several streptococci," states that upon the answer to that question hangs all antistreptococci serum therapy.

That the possible unity or diversity of species of streptococci has played a large role in the attempted explanations of the favorable action of the various antistreptococcic sera submitted to experimental or clinical tests, is undoubtedly true. However a definite answer to the question propounded by Besredka would undoubtedly not settle all the clearly evident problems concerning the serum therapy of streptococcus infections.

One of the most important of these problems concerns the real nature of such infections. Can they be classed altogether in the group of toxic diseases, or do they on the other hand belong entirely to the group of septicæmic infections, or still further are some of these micro-organisms capable of producing infections of either group under different conditions of virulence and susceptibility?

When the necessity for satisfactory answers to these questions is added to that for the question as to the unity or diversity of species, we are virtually confronted by most of the as yet unanswered problems of infection and immunity, together with all those concerning the relation and differentiation of bacterial species.

Besredka in considering the question of the unity or plurality of species of streptococci has referred to the important works and studies upon the macro and microscopic characters of streptococci, upon their origin, their biological, chemical and hæmolytic properties, and finally the preventive and fixative powers of antistreptococcic sera.

After citing the works of Lingelsheim, Kurth and others concerning morphological characters, he concludes that the attempts at classification on the basis of the morphological differences known at present rest on a most insecure foundation.

The attempts of Fehleisen and Rosenbach to classify streptococci by their origin from different diseases are shown to be discredited by the work of Petruschky, who was able to produce

several types of infection, such as erysipelas, phlegmon and septicæmia, with the same organism.

Marmorek considered he had demonstrated the unity of streptococci from man when he found that they would not grow in the filtrate from other cultures of streptococci. However he found one culture which grew abundantly.

Marmorek likewise thought the presence of a haemolytic power in the cultures of streptococci from man would serve to distinguish them as a group. Schleisinger however found this property in cultures of streptococci very variable, and its presence not proportionate to their virulence.

Other authors working on this aspect of the subject, but not quoted by Besredka are Schottmüller², whose conclusions are in harmony with those of Marmorek, while Rieke³ believes with Schlesinger that the presence or absence of the hæmolytic power cannot serve as a distinguishing characteristic between species.

Besredka proceeds to discuss and interpret the results obtained by agglutination reactions between streptococci and both sera obtained from cases of real or supposed infections with streptococci, and also those immune sera prepared by the injection of animals with streptococci.

The earlier works of Van de Velde and Tavel indicated that a basis for differentiating species by agglutination tests with artificial immune sera was most unlikely on account of the great instability of the agglutinating properties of these organisms. For years this opinion was so strong that no work in this line was carried on until the specificity or non-specificity of streptococci obtained from fatal cases of scarlet fever, as shown by agglutination reactions, was raised by Moser, and afterwards discussed by a large number of workers of whom Aronson, Neufeld, Weaver, Baginsky and Dopter were the more important.

Without going into details he makes the justifiable conclusion that agglutination reactions between the sera of cases of scarlet fever and streptococci are not competent to settle the question. While the results of Moser and Pirquet, Salge and Hasenknopf spoke for such specificity, those of Baginsky, Weaver and Dopter were wholly negative to that conclusion.

The results of the work of Aronson and Neufeld on agglutination tests with artificially prepared immune sera, also indicated that these reactions are very susceptible to changing conditions,

such as the presence of an antiseptic in the serum, or in the cultures, changes in virulence, both natural or due to passage through animals, and variations in the reaction of the culture media.

Besredka therefore believes that the phenomenon of agglutination is not alone sufficient to warrant the drawing of conclusions as to the unity or multiplicity of streptococci.

He then passes on to the consideration of the preventive power of antistreptococcic sera towards infection with various cultures of this organism. Marmorek first announced that a serum prepared with one streptococcus was protective against all others. Diametrically opposite results were obtained by Mery and Courmont.

Aronson and Neufeld although opposed to Marmorek's work in general, supported his conclusion on this point. However Besredka discloses the fact that Aronson's work was done with cultures rendered virulent to experimental animals and that Neufeld's cultures doubtless were also, and he further shows that this so-called "tier passage" wholly alters their individuality.

An antistreptococcic serum prepared by the use of the virulent "tier passage" cultures is capable of protecting test animals from fatal doses of such cultures, while a serum prepared by non "tier passage" cultures affords little or no protection. As most streptococci isolated from man are not virulent for experimental animals such as mice and rabbits, it is quite natural that much work should have been done with cultures rendered virulent artificially, and in this way many of the results of preventive tests indicating the unity of streptococci, have been brought about.

When seen in their true light such results do not tend to indicate a unity of species.

Besredka finally refers to his own work on the use of the power of fixation of the immune bodies in antistreptococcic sera towards their homologous microorganisms, as a means of differentiating between streptococci. He remarks that the "fixateurs" in immune sera have always shown a remarkable specificity. He claims that the streptococcic "fixateur" is also specific, and that there are streptococci which possess a particular "fixateur" and others which have a common "fixateur."

The methods used and results obtained by Besredka are given more fully in an earlier paper⁴. There the author claims that

the so-called fixateur cannot be the immune body, and he shows by experiments that all antistreptococcic sera do not contain it. For instance a serum obtained from Aronson and very active against the streptococcus used to produce it, was unable to fix that organism, while Besredka's serum although less active against its streptococcus possessed marked fixing power. It is quite probable that this fixing power is due to some peculiarity in the unusual technique employed by Besredka, and but little dependence can therefore be placed upon his method for the differentiation of streptococci.

From this review by Besredka it would seem to be warranted to conclude that we have not as yet a decisive method of determining the relationship existing between streptococci.

This being the case it is also manifestly impossible to draw conclusions as to the preventative or therapeutic value of such sera by the use of any of the methods of testing antistreptococcic sera for their agglutinating, preventive of fixing powers.

We have left therefore as a means of judging the therapeutic value of antistreptococcic sera only the results obtained from their use in infections by these microorganisms in man.

However the conditions under which such clinical results are obtained are so variable, and infections with streptococci are so polymorphic in character, that the deductions from such observations on anything but the most extensive scale are apt to be misleading.

Recently the interest in the subject has centered chiefly on the results obtained by the use of antistreptococcic serum in those specific diseases, scarlet-fever, rheumatism and smallpox, in which streptococci have been shown to be present in unusual numbers, and are considered to be either their etiological agent or the cause of secondary infections.

Baginsky⁶ believing that streptococci had an etiological relationship to scarlet-fever, used Aronson's antistreptococcic serum in the Kaiser u. Kaiserin Frederich Kinderkrankenhaus in Berlin on 63 cases of scarlet-fever in doses up to 20 c. c. each. Of these nine died, generally from sepsis, giving a fatality of 14.3%. The death rate in this hospital from scarlet-fever in ten years had varied from 34% to 12%. The cases on which he tested the serum were severe in his opinion, and he believes the injections of the serum did much good. Their effect on the clinical symptoms was in his opinion quite marked. A closer analysis of the

figures demonstrates the death rate in the injected cases to be 11% and in the uninjected 17%.

Aronson's serum, such as was used by Baginsky, is prepared by the injection of horses with cultures of streptococci rendered virulent for small animals by the so-called "tier passage."

Moser⁶ believing that Aronson's method of preparing antistreptococci serum impaired its protective effect against streptococci virulent to man, used for the treatment of scarlet-fever cases a serum prepared by Paltauf by the injection of horses with numerous cultures freshly obtained from fatal cases of that disease.

Escherich⁷ used this serum extensively and followed Moser in using large doses. In all he reports 142 cases treated with Moser's serum in doses varying up to 180 c.c. The effect on the clinical symptoms, he states, comes on rapidly within four to twelve hours. It consists in the relief of all the symptoms without shock or collapse. The temperature falls rapidly, also the frequency of the pulse and respiration, and the nervous symptoms subside. The serum must be given early before, or not later than, the height of the temperature and specific symptoms of the disease. Only when given early does the serum have any effect on the septic symptoms which usually follow the acute poisoning. The same holds true of the effect of the serum injections on the sequelae, such as otitis media, endocarditis, nephritis, etc. These are not prevented nor influenced if the serum is not given very early in the disease.

Escherich gives figures showing a diminished death rate in the St. Anna-Kinderspital of from over 12% before the introduction to 9 and 6% after the introduction of the Moser serum.

He believes the serum acts as a true antitoxic agent on account of the rapidity of its effect on the toxic symptoms. A few control tests with normal and another antistreptococcic serum have been reported, but they did not show the same strikingly favorable results.

V. Bokay⁸ also reports the results of the use of the Moser serum in 12 cases. Single doses between 100 and 200 cubic centimeters were used, and in but two cases was it necessary to repeat the first dose. The author obtained practically the same results as did Escherich.

Less favorable results have been obtained by Mendelsohn⁹ in the treatment of one hundred and sixty-five cases with Aronson's and four cases with Moser's serum. He failed to note any es-

sential alterations of the course of the true scarlet-fever symptoms or any marked fall in the temperature brought about by either serum. He then calls attention to the rapid declines in the temperatures in many cases not treated with any serum, and notes the similarity between such temperature changes and those described by Moser and Escherich as due to the serum injections. He also failed to note any special prevention of septic complications or other sequelae.

Ganghofner¹⁰ used Aronson's serum in fifteen and Moser's in eight very severe cases of scarlet-fever. Of the former series seven died and of the latter five. He noted no such sudden falls in temperature after the injections as Moser and Escherich described. Nor were complications prevented. Two of the patients receiving the Moser serum on the first and second day of the disease recovered from severe attacks.

Quest¹¹ administered Bujwid's antistreptococcic serum to eleven and Moser's serum to ten cases of scarlet-fever. The former serum is prepared like Aronson's. Of the former eleven cases two died. The temperature was lowered in but two instances and in but one to any extent. Of the latter ten patients three died, two soon after injection, and the third had tuberculosis as a complication. The temperature fell in twenty-four hours in two instances but rose again in four days.

In either series but few patients experienced a general betterment of their condition. There was no difference in the course of the disease in three sisters, one of whom received the Bujwid, another the Moser, and the third no serum whatever. In only one case were the sequelae apparently prevented.

The author considers his series too small to warrant definite conclusions, but he does not consider the advantageous working of the serum to have been demonstrated.

In the treatment of articular rheumatism Menzer¹² uses an antistreptococcic serum prepared, as is the Tavel serum, by the treatment of horses with a number of cultures obtained directly from man, and not artificially enhanced in virulence.

He believes that the serum acts not as an antitoxin but by the stimulation of the phagocytic cells of the infected person. He claims that a healing reactive hyperaemia occurs after the injection of the serum, and that this reaction is indicative of, and necessary for, the best results. The beneficial effects which he expects from the injections are the prevention of subsequent

acute attacks or of the persistence of a chronic form of the disease, and also the prevention of heart complications.

Small doses of five cubic centimeters each were administered to 47 acute cases. Of these 45 recovered, 25 remained well for one year, one had a recurrence, and 21 were lost sight of after recovery.

Of eleven secondarily chronic cases eight recovered, and the others were benefited. Nine remained well and two were lost sight of.

Of eleven primarily chronic cases five recovered, two were much improved, and four were only partially benefited.

Schmidt¹³ used the Menzer serum in fifteen cases. Of these, six were benefited, four obtained doubtful relief, and five were not relieved. The author closely agrees with Menzer as to the mode of action of the serum. It is not antitoxic in its action. He obtained the best results in subacute cases of rheumatism, but little effect in the acute, and none in the chronic.

In view of the claims of Moser concerning the use of antistreptococcic serum in scarlet-fever Perkins and Pay¹⁴ administered such a serum in nine cases of smallpox. In this disease the authors had found streptococci present in the circulating blood in 54 per cent. of the cases examined, and in the heart's blood of practically all the cases examined at autopsy.

Of the nine cases treated with the serum, in none could any benefit be detected. Where streptococci were in the circulating blood the serum treatment did not diminish their number.

In order to make up any possible deficiency in the so-called complement in the patient's sera, and thus enable the immune bodies in the antistreptococcic serum to bring complement into union with the infecting organisms, according to Ehrlich's theory of bacteriolytic action, normal serum from a healthy person was administered to three cases who also received the antistreptococcic serum. No benefit was noted from the treatment.

Horder¹⁵ reports a unique case of chronic streptococcus endocarditis, in which the infecting micro-organism was isolated from the circulating blood and was utilized in the immunization of a donkey whose serum was used in the treatment of the case.

Preceding the injection of the serum of the well immunized donkey, the patient was injected with 30 cubic centimeters of serum from a normal person with the idea of making up for any deficiency of complement in her own serum. Also just before

the use of the immune serum, normal donkey serum was administered as a control test. No beneficial change in the clinical symptoms of the patient was noticed from the use of these sera.

A horse was also immunized with the streptococcus isolated from patient's blood, but the administration of this serum did not produce any beneficial change in the patient.

The author concludes that the case was either one of mixed infection or that the immune body was deficient in the specially prepared antistreptococcic sera, or that the patient's serum did not contain sufficient complement to bring about bacteriolysis of the infecting streptococci. He believes that neither of the two latter deficiencies existed.

That neither the sera of normal healthy individuals, nor that of convalescent cases of scarlet-fever has any bactericidal or bacteriolytic effect on streptococci has been shown by Weaver and Ruediger¹⁶, and Bergey¹⁷ has shown, and Besredka¹⁸ claims the same for antistreptococcic sera.

These results indicate the probability that antistreptococcic serum does not act *in vivo* after the manner of a bactericidal agent.

Whether Escherich is correct in his belief that the Moser serum acts as an antitoxic agent in cases of scarlet-fever is as yet uncertain, for the reason that the majority of investigators have been unable to demonstrate any toxin producing powers in streptococci.

Simon¹⁹ has reviewed the whole subject of streptococcus toxins and concludes that outside the living body at least, these bacteria produce no definite soluble toxin, and only an exceedingly weak and uncertain intracellular toxin. He was able to produce a small amount of toxin by growing streptococci in a mixture of pleuritic effusion free from leucocytes, with bouillon, but this toxin did not resemble the toxins of diphtheria and tetanus bacilli, nor did it have any relation to the haemolytic substance elaborated by streptococci under some conditions.

The results of the investigations of Hektoen²⁰, Jochman²¹, and others, have shown that streptococci when present in cases of scarlet-fever are widely distributed throughout the body, thus placing these infections in the group of bacteriemias rather than in the group of toxic diseases.

Grave doubts, therefore, exist as to the antitoxic and bactericidal modes of action of antistreptococcic sera, and the majority

of investigators are apparently inclined, at present, to consider the stimulation of phagocytosis as its probable mode of action.

Besredka²² arrives at that conclusion by a process of exclusion, and Bergey²³, de Passetzka²⁴, and others have demonstrated either a strong phagocytic action of leucocytes on streptococci *in vitro* or a greatly increased efficiency *in vivo* of antistreptococcic serum to which fresh leucocytes had been added. Bergey demonstrated that *in vitro* the increased action induced by the addition of the fresh leucocytes was largely phagocytic.

Ruediger²⁵ has not only shown that a strong phagocytic action on non-virulent streptococci by leucocytes takes place both *in vitro* when the leucocytes in pleural exudate are used and in the bodies of rabbits, guineapigs and in man, but also that the cells in guineapigs' bone marrow can take up living non-virulent streptococci. He also found that when rabbits' leucocytes from pleural exudates were mixed with rabbit serum heated to 60° C. for half an hour, that far less phagocytosis of streptococci occurred than when the leucocytes were mixed with the normal rabbit serum.

This point had been previously brought out and elaborated by Wright and Douglas²⁶, who showed that the important property or bodies which bring about phagocytosis reside in the blood serum, and that these bodies so act upon the bacteria that they become an easy prey to the leucocytes.

They termed these bodies "opsonins."

Leucocytes free from serum or when washed and mixed with heated serum show no phagocytic power.

The opsonic power of serum gradually diminishes on standing. It can be increased in the living body by the injection of sterilized cultures of certain pathogenic bacteria, and to this increased opsonic power is due the increased resistance manifested by the treated patient to the bacteria injected.

Hektoen and Ruediger²⁷ have confirmed this work and have further shown that the opsonins of the serum of one species of animals will in many instances, sensitize the bacteria for phagocytosis by the leucocytes of a different species.

Neufeld and Rimpan²⁸ have furthermore shown that antistreptococcic serum also acts upon streptococci in such a manner as to bring about the most active phagocytosis. They show that the serum acts only on the streptococci and not upon the phagocytic leucocytes directly.

Breton²⁹ while able to produce an antihæmolytic serum by the injection of rabbits with streptococci hæmolsin was also able to show that this antihæmolsin was not present in active anti-streptococcic sera, and had no relation to the active of such sera.

The exact mode of action of antistreptococcic sera cannot be said to have been demonstrated as yet.

HERBERT D. PEASE.

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Public Health

Edited by Joseph D. Craig, M.D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

Deaths

ABSTRACT OF VITAL STATISTICS, JULY, 1905

	1901	1902	1903	1904	1905
Consumption	15	17	13	18	14
Typhoid Fever.....	0	1	1	1	1
Scarlet Fever.....	0	0	0	1	0
Measles	0	2	2	0	0
Whooping-cough	0	1	1	0	1
Diphtheria and Croup.....	1	1	0	2	0
Grippe	1	0	0	0	0
Pneumonia	2	4	15	9	0
Broncho-pneumonia	0	0	1	2	2
Bright's Disease.....	12	7	12	15	19
Apoplexy	15	4	6	8	12
Cancer	6	5	10	7	9
Accidents and Violence.....	17	12	11	9	11
Deaths over 70 years.....	24	19	24	24	29
Deaths under one year.....	25	26	48	43	29
Total deaths.....	142	135	177	169	156
Death rate.....	16.71	15.88	20.83	19.89	18.36
Death rate less non-residents....	15.18	13.65	18.36	18.00	16.59

Deaths in Institutions

	1902		1903		1904		1905	
	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent
Albany Hospital.....	4	8	8	13	15	6	9	9
Albany County Jail.....	0	0	0	0	0	0	1	0
Albany Orphan Asylum.	0	0	0	0	0	1	0	1
County House.....	1	2	5	2	5	0	3	0
Homeopathic Hospital..	2	1	1	2	4	2	0	0
Hospital for Incurables.	0	0	0	0	0	0	1	0
House of Good Shepherd	1	0	0	0	1	0	0	0
House of Shelter.....	1	0	0	0	0	0	0	0
Friendless Home.....	0	0	0	0	0	0	1	0
Little Sisters of the Poor	0	0	0	0	0	0	0	0
Public Places	0	6	5	2	1	2	0	0
St. Francis De Sayles Orphan Asylum.....	0	0	3	0	1	0	0	0
St. Margaret's Home...	1	1	3	1	4	3	6	2
St. Peter's Hospital.....	2	1	2	1	4	1	2	3
St. Vincent's Male Or- phan Asylum.....	0	0	0	0	0	0	0	0
St. Vincent's Female Orphan Asylum.....	0	0	0	0	1	1	0	0
Home for Aged Men.	0	0	0	0	2	0	0	0

Marriages	29
Births at term.....	97
Still births.....	11
Premature births.....	4
Total	141

PLUMBING INSPECTIONS

In the Bureau of Plumbing, Drainage and Ventilation, there were 343 inspections, of which 198 were of old buildings and 145 of new buildings. Fifty-three iron drains inspected, 20 connections with street sewers, 27 tile drains, 2 urinals, 45 cesspools, 106 wash basins, 103 sinks, 74 bath tubs, 66 wash trays, 11 trap hoppers in yard, 135 tank closets, 1 stable wash stand, 2 shower baths, 1 horse trough. One hundred thirty-six permits were issued, 94 were for plumbing and 42 for building purposes. There were 24 plans submitted of which 12 were of old buildings and 12 for new buildings. Five houses were tested on complaint, 4 with blue, red, and 1 with peppermint. There were 19 water tests made. Thirty-seven houses were examined on complaint and 62 reinspections were made, 23 complaints were found valid and 14 without cause.

There were 22 mercantile certificates issued to children and 19 factory certificates issued to children.

BUREAU OF CONTAGIOUS DISEASES

Cases Reported

	1901	1902	1903	1904	1905
Typhoid Fever	4	9	3	4	8
Scarlet Fever	4	4	7	7	0
Diphtheria and Croup.....	10	16	13	8	6
Chickenpox	2	4	1	0	0
Measles	27	7	35	1	4
Whooping-cough	2	0	0	0	0
Consumption	1	0	1	2	2
Totals	50	40	63	22	20

Contagious disease in relation to Public Schools—None reported.

Number of days quarantine for diphtheria:

Longest.....34 Shortest..... 8 Average.....18 4-7

Number of days quarantine for scarlet fever:

Longest.....38 Shortest.....14 Average.....29 3-5

Fumigations:

Houses.....12 Rooms.....21

ANTITOXIN

Cases of diphtheria reported.....	7
Cases of diphtheria in which antitoxin was used.....	7
Cases in which antitoxin was not used.....	0
Deaths after use of antitoxin.....	0

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

The annual meeting of the Medical Society of the County of Albany was held in Alumni Hall, Tuesday afternoon, May 9, 1905. The meeting was called to order by the President at 4:35 o'clock. The following members were present: Drs. Ball, Bartlett, Bedell, Bendell, Boyd, Branan, Carroll, Classen, Cook, Curtis, George, W. H., Goeway, Gutmann, Hacker, Hinman, Jenkins, Lempe, Lipes, Lochner, Lomax, MacFarlane, McKenna, Mears, Mereness, Moore, C. H., Moston, Murray, Myers, Neuman, O'Leary, D. V., Papen, Rooney, Ryan, Sautter, Shaw, Sheldon, Skillicorn, Steenberg, Theisen, Traver, Troidle, VanderVeer, A., VanderVeer, E. A., VanderVeer, J. N., Wansboro, Ward, Wiltse, Winne, C. K., Witbeck, C. E.

Dr. WARD moved that the minutes of the last regular meeting be adopted as printed in the ANNALS. Seconded. Carried.

Dr. TRAVER then reported for the Board of Censors as follows: (Insert here the report of the Board of Censors).

Dr. W. H. GEORGE then presented the Treasurer's yearly report, as follows: (Insert here the Treasurer's report).

The President then appointed Drs. E. A. VanderVeer, Classen and Mereness a committee to audit the Treasurer's accounts.

The Secretary then read the applications for membership from Drs. J. A. Sampson, D. V. O'Leary, Jr., and C. A. Whitbeck, which had been favorably reported by the Board of Censors.

Dr. MACFARLANE moved that the Secretary be directed to cast one ballot for Drs. Sampson, O'Leary and Whitbeck, electing them to membership in the Society. Seconded. Carried.

The Secretary then cast a ballot and the President declared them members of the Society.

Dr. BALL proposed an amendment to the By-laws of the Society (chapter V, article 3) changing the dues of the Society from one to two dollars yearly.

The President then presented his annual address, which is published in full in the ANNALS.

Dr. BENDELL moved that the Society tender its thanks to the President for his very interesting, able and witty address. Seconded. Carried.

Dr. CURTIS said that for a long time past it had been the custom for the Society to nominate for the presidency only the older members. He, however, thought that as all things human must change, it was well that he could have a part in being able to name a man who, young as he was, was worthy of the place. If he might be permitted to digress, he wished to say that it seemed to be a fortunate coincidence that the President of the centennial year of the Society should be a Princeton graduate, as was the first President. Moreover it needed no word of his to call the attention of the Society to the fact that the name of

Boyd was writ large on the annals of the Society. To revert to the early subject of his discourse, he took pleasure in nominating Dr. James W. Wiltse for President of the Society. Dr. Ward seconded the nomination.

Dr. BENDELL moved that as there were no further nominations, the Secretary be directed to cast one ballot for Dr. Wiltse. Seconded. Carried.

The Secretary notified the President that the ballot was cast, and the President then declared Dr. Wiltse President for the ensuing year.

Dr. WILTSE said that he was deeply grateful for the high honor which the Society had conferred upon him. This feeling was deepened when he considered the illustrious names of those who had preceded him in this place. It seemed that the functions of the County Society may be enumerated as three—to protect practitioners from charlatantry, to aid the State to improve the condition of the physician and medical education and practice, and to improve the social understanding existing among physicians in the community. He said that it was his aim to accomplish as well as lay in his power these three ends.

Dr. MACFARLANE said that he thought the nomination for Vice-President should go out of the city, and he took great pleasure in nominating for that office Dr. J. F. McGarrahan, of Cohoes.

Dr. BENDELL moved that the Secretary be directed to cast one ballot for Dr. McGarrahan for the office of Vice-President. Seconded. Carried.

The Secretary cast the ballot and the President declared Dr. McGarrahan elected Vice-President for the ensuing year.

Dr. S. B. WARD moved that the Treasurer be empowered to cast one ballot electing the present Secretary to the same office for the ensuing year. Seconded. Carried. The Treasurer reported that the ballot was cast and the President announced the election of Dr. Rooney as Secretary for the ensuing year.

Dr. ROONEY moved that the same procedure be had as in the foregoing offices and that Dr. George be so elected as Treasurer for another term. Seconded. Carried. The Secretary cast the ballot and Dr. George was declared Treasurer for the coming year.

There were nominated for delegates to the State Society the following: Drs. W. G. Lewi, Rooney, Ralph Sheldon, Jenkins, Wansboro, Lomax, Bedell, Lempe, Mears, Hinman, Papen, J. N. VanderVeer, C. K. Winne, Troidle, Hacker, O'Brien, Moston W. H. George, Frederick Crounse, Montmarquet.

Dr. COOK moved that the resolution adopted October 11, 1892, be suspended for the present meeting. Seconded.

Dr. BENDELL said that he trusted that Dr. Cook would see the wisdom of not opening too large the door of admission to the State Society, and that he would withdraw his motion.

The Secretary said that if the resolution were held in force, only one of the gentlemen nominated for delegate would be eligible for election.

The motion of Dr. Cook was then put and carried.

The President appointed as tellers for the election Drs. Classen, MacFarlane and Lochner.

During the balloting for delegates, Dr. Ward moved that the same Board of Censors elected at the last annual meeting of the Society serve for the ensuing year. Seconded. Carried. The Secretary cast one ballot for Drs. Moston, Lomax, Archambault, Dawes and Traver, who were thereafter declared elected for the ensuing year.

The tellers announced and the President afterward declared the following elected Delegates to the State Society: Drs. W. G. Lewi, Rooney, Sheldon, Jenkins, Wansboro, Lomax, Bedell, Lempe, Hinman, Papen, J. N. VanderVeer, C. K. Winne, Troidle, O'Brien, W. H. George, Frederick Crounse.

On motion the Society adjourned.

JAMES F. ROONEY, *Secretary.*

[*Minutes received for publication, August 23, 1905.*]

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR JULY, 1905.—Number of new cases, 96; classified as follows: district cases reported by health physicians, 56; patients of limited means, 32; old cases still under treatment, 39; total number of patients under nursing care during the month, 135. *Classification of diseases (new cases)*: medical, 33; surgical, 6; obstetrical work of the Guild, 35 mothers and 34 infants under professional care; dental, 1; eye and nose, 1; contagious diseases in medical list, 5. Transferred to hospitals, 6; deaths, 4.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 3; attending obstetricians, 2; medical students in attendance, 6; Guild nurses, 5; cases, 8; number of visits by head obstetrician, 1; by attending obstetricians, 3; by the medical students, 30; by the Guild nurses, 60. Total number of visits for this department, 94. Visits of Guild nurses (all departments): Number of visits with nursing treatment 822; for professional supervision of convalescents, 208; total number of visits, 1,030. Six graduate nurses and six assistant nurses were on duty. Cases were reported to the Guild by three of the health physicians and by 33 other physicians, and by one dentist.

ASSOCIATION OF HOSPITAL SUPERINTENDENTS.—The seventh annual meeting of the Association of Hospital Superintendents will be held in Boston, Tuesday, Wednesday, Thursday and Friday, September 26, 27, 28 and 29, 1905. The executive committee proposes that four mornings and two afternoons of the above dates be devoted to sessions, leaving two afternoons open for excursions, visiting hospitals, or such other work or amusements as members may elect.

The headquarters of the association will be at the Hotel Vendome, Commonwealth Avenue, where special rates have been secured for members, their families or their friends.

The following papers are promised: Annual address by the President; Multiple-storied Single Building for Hospitals in Large Cities, Dr. A. J. Ochsner, of Chicago; Standardizing Hospital Construction and Equipment, Bertram T. Taylor, Architect, of Boston; Hospital Operating-rooms and Their Accessories, Mr. Edmund M. Wheelwright, Architect, of Boston; Has the Increased Cost in Hospital Construction and Equipment Been Justified? *Affirmative*: Dr. S. S. Goldwater, Mt. Sinai Hospital, N. Y.; *Negative*: Dr. Thomas Howell, Worcester City Hospital. Features of Hospital Engineering: Some Engineering Features of the New Cincinnati City Hospital, Mr. John Fehrenbatch, Cincinnati City Hospital; Refuse-destroyers and Disinfection, Dr. John H. McCollom, The Boston City Hospital, South Department; Cold Storage, and the Artificial Refrigeration Question, Dr. Renwick R. Ross, Buffalo General Hospital; Engine-room Economics, Mr. Jeremiah C. Long, Chief Engineer, Boston City Hospital; Hospital Accounts (once more), Dr. C. Irving Fisher; The Educational Standard of Training-schools for Nurses, Miss Mary M. Riddle, Newton General Hospital; Is it Advisable to Establish Regularly Organized Training-schools for Male Nurses in Large General Hospitals? The Administration of a Large General Hospital, Mr. George P. Ludlam, New York Hospital. Other papers are partially promised. A Brief Study upon Diets, Dr. George H. M. Rowe, Boston City Hospital; Hospital Economics, Dr. F. A. Washburn, jr., and others; Co-operation of Hospitals in the Same Community; "Question-Box" session.

GEORGE H. M. ROWE, M.D., *President*.

MRS. A. M. LAWSON, *Secretary*.

THE FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.—The next International Medical Congress will be held in Lisbon, April 19 to 26, 1906. It is expected that it will be one of unusual importance, for a meeting which will be held in what has always been considered as an out of the way country. Already the titles of papers from some of the most distinguished men of the medical profession have been received. Some of the topics for discussion that have been selected by the Executive Committee are the following:

Section of Descriptive and Comparative Anatomy, Anthropology, Embryology and Histology.

Definition, structure and composition of protoplasm.

Origin, nature and classification of pigments.

Cellular changes in normal tissues.

Evolution and involution of the thymus gland.

Section of Physiology.

The role of leucocytes in nutrition.

The thyroid secretion.

Renal permeability.

The nutritive value of alcohol.

The physiology of the cytotoxins.

The blood ferments.

Section of General Pathology, Bacteriology and Pathological Anatomy.

What are the present scientific proofs of the parasitic nature of neoplasms, especially of cancer?

Preventative inoculations against bacterial diseases.

Preventative inoculations against protozoic diseases.

Preventative inoculations against diseases from an unknown specific agent.

The pancreas and fat necrosis.

Therapeutics and Pharmacology.

Local therapeutics in infectious diseases.

Separation, from a physiological and therapeutic point of view, of the different radiations produced in Crooke's tubes and of those which are sent out by radioactive bodies.

The therapeutic value of bactericidal serums.

The relation between the molecular constitution of organic bodies and their physiological and therapeutic action.

Section of Medicine.

The pathogenesis of diabetes.

The pathogenesis of arterial hypertension.

The treatment of cirrhosis of the liver.

Cerebrospinal meningitis.

International defense against tuberculosis.

Meningeal hemorrhages.

Section of Pediatrics.

Spastic affections of infancy; classification and pathogenesis.

Cerebrospinal meningitis; etiology and treatment.

The social struggle against rickets.

Orthopedic surgery in affections of nervous origin, spastic and paralytic.

Congenital dislocation of the hip.

The treatment of abdominal tuberculosis (peritoneal).

Neurology, Psychiatry and Criminal Anthropology.

Penal reform from the anthropology and psychiatric point of view.

Forms and pathogenesis of dementia praecox.

The relations of progressive muscular atrophy to Charcot's disease.

Cerebral localization in mental disease.

Education and crime.

Stigmata of degeneration and crime.

Section of Surgery.

Septic peritoneal infections; classification and treatment.

Gastrointestinal and intestinointestinal anastomoses.

Recent additions to arterial and venous surgery.

Section of Medicine and Surgery of the Urinary Organs.

Surgical intervention in Bright's disease.

Surgical treatment of prostatic-vesical tuberculosis.

Progress of urology in the diagnosis of renal disease.

Painful cystides.

Section of Ophthalmology.

Blepharoplasty.

Serotherapy in ophthalmology.

Section of Laryngology, Rhinology, Otology and Stomatology.

Study of the epileptogenous action of foreign bodies in the ear and of vegetations in the naso-pharynx.

The different forms of suppuration of the maxillary sinus.

Injections of paraffin in rhinology.

Differential diagnosis of tubercular, syphilitic and cancerous lesions of the larynx.

Choice of anesthesia in the extraction of teeth.

Treatment of alveolar suppuration.

Section of Obstetrics and Gynecology.

Conservative surgery of the ovaries.

Tuberculosis of the adnexa.

Symphiotomy.

Pregnancy and cancer of the uterus.

Therapy of puerperal infections.

Section of Hygiene and Epidemiology.

The intermediary of yellow fever.

The cooperation of nations to prevent the importation of yellow fever and the pest.

Watering the streets as a means against tuberculosis.

Recent additions to the etiology and epidemiology of epidemic cerebrospinal meningitis.

Section of Military Medicine.

Portable ration of the soldier during campaign.

The purifying of the country water.

Emergency hospital on the battlefield.

Section of Legal Medicine.

Signs of death from drowning.

Ecchymoses in legal medicine.

Epilepsy in legal medicine.

Organization of medico-legal services.

Section of Colonial and Naval Medicine.

Etiology and prophylaxis of beri-beri.

Etiology and prophylaxis of dysentery in hot countries.

Mental diseases in tropical countries.

Hospital ships and their function in time of war.

Tuberculosis in the navy and its prophylaxis.

THE BULLETIN OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK.—

In issuing the first number of the second volume, the first volume in its present form, the Medical Board of the Lying-in Hospital announces that it is proposed to publish the Bulletin at convenient intervals, four or more times a year, the volume consisting of about 20 pages and liberally illustrated. A vast amount of clinical material is constantly under observation by the various members of the attending staff, which, properly presented, should prove of great interest and value to the

medical profession. Articles contributed to the Bulletin are written by officers of the hospital, or by those holding fellowships for the purposes of original research. It is intended that they shall be mainly of a practical character and catholic in their variety. The large number of patients cared for by this institution either in the wards or in their homes (about 38,000 during the past 14 years) and the careful records kept of the case, warrants the belief that the resulting statistical information may be looked upon as bearing the stamp of truth and accuracy. No advertisements are to be published. In addition to the original articles on obstetrical topics, it is believed that a department of book reviews and classified bibliography of obstetrical literature will add to the value of the Bulletin. We trust this undertaking will meet with the success it deserves. Communications may be addressed to the Editor of the Bulletin, Lying-in Hospital, Second Avenue and 17th Street, New York City.

PERSONAL.—Dr. T. D. CROTHERS (A. M. C., 1865), of Hartford, Conn., Superintendent of the Walnut Lodge Hospital, has accepted an invitation to deliver the first oration in the Norman Kerr Memorial Lectureship, at London, England, October 10, 1905. Dr. Kerr will be remembered as an eminent London physician who made a special study of Inebriety, Alcoholism and other drug disorders. He wrote several excellent books on this subject, and was instrumental in securing the enactment of laws for the control of inebriates, and the promotion of hospitals for their care throughout Great Britain. He founded the British Society for the Study of Inebriety, in 1884, and this Society and his friends have organized a memorial lectureship for yearly orations on his life and work. It is a very pleasant recognition of the progress of medical science in this country, that an American physician should be invited to deliver the first lecture

—Dr. ALVARADO MIDDLEDITCH (A. M. C., 1856), formerly at Watertown, Iowa, has removed to Pasadena, California.

—Dr. GEORGE A. R. BLAKE (A. M. C., 1886), formerly at Watertown, N. Y., has removed to Great Bend, N. Y.

—Dr. JAMES A. CLYNE (A. M. C., 1886), formerly at Cohoes, N. Y., has removed to Joliet, Ill.

—Dr. EDWARD L. JOHNSON (A. M. C., 1891), formerly at San José, California, has removed to Chanute, Kansas.

—Dr. LEWIS R. OATMAN (A. M. C., 1891), formerly at Gloversville, N. Y., has removed to Greenwich, N. Y.

—Dr. WILL H. SCHWARTZ (A. M. C., 1896), formerly at Dexter, N. Y., has removed to Colton, N. Y.

—Dr. RUDOLPH F. DIEDLING (A. M. C., 1896), formerly at Elmira, N. Y., has removed to Saugerties, N. Y.

—Dr. FRED C. LEONARD (A. M. C., 1897), formerly at Worcester, N. Y., has removed to Carbondale, Pa.

—Dr. WILLIAM L. FODDER (A. M. C., 1897), formerly at Cohoes, N. Y., has removed to Schenectady, N. Y.

—Dr. GEORGE M. GILCHRIST (A. M. C., 1898) is at Groton, N. Y.

—Dr. ADOLPH R. V. FENWICK (A. M. C., 1899) is in practice at Central Falls, R. I.

—Dr. GEORGE E. BEILBY (A. M. C., 1899) has resigned his position as Resident Physician at the State Industrial School, Rochester, N. Y., and will devote himself to the practice of surgery, at 12 Washington Avenue, Albany, N. Y.

—Dr. JAMES E. KELLY (A. M. C., 1901) is in practice at Saratoga Springs, N. Y.

—Dr. VIRGIL D. SELLECK (A. M. C., 1903), is in practice at 2 Maple Street, Glens Falls, N. Y.

—Dr. ARTHUR P. CLARK (A. M. C., 1905) has established his office at New Hartford, N. Y.

—Dr. J. P. FABER (A. M. C., 1905) has taken the office of the late Dr. Fred Sauerbrie, at Clarksville, N. Y.

—Dr. WILLIAM J. GARVEY (A. M. C., 1905) has accepted an appointment at the Emergency Hospital, Boston, Mass.

—Dr. BENJAMIN F. SEAMAN (A. M. C., 1905) has opened his office at Matteawan, N. Y.

—Dr. HAMILTON M. SOUTHWORTH (A. M. C., 1905) is in practice at Old Chatham, Columbia County, N. Y.

DEATHS.—Dr. JOHN YANNEY (A. M. C., 1857) died at Ephratah, N. Y., July 24, 1905.

—Dr. CLARKSON C. SCHUYLER (A. M. C., 1875), Ex-President of the Alumni Association of the Albany Medical College, died at Plattsburgh, N. Y., August 16, 1905, aet. 55.

—Dr. RUDOLPH BESTLE (A. M. C., 1888) died at his home in Hunter, N. Y., Wednesday, August 9, 1905.

—Dr. WILLIAM W. CLARK (A. M. C., 1894) was drowned at Maine, N. Y., July 12, 1905, after having rescued a young boy from the water.

In Memoriam

IRA P. SMITH, M. D.

Dr. Ira P. Smith, a member of the class of 1859 of the Albany Medical College, died suddenly of heart disease at his home in Bath, Steuben county, N. Y., May 26, 1905.

Ira Pond Smith was born in the town of Dansville in August, 1835, and was therefore in his seventieth year. He obtained his education in the Rogersville seminary and the University of Michigan; studied medicine with Dr. Charles S. Ackley, of Rogersville, was graduated in medicine in Albany in 1859, and practiced in Avoca until 1862, when he entered the service as an acting assistant surgeon in the regular army, where he remained two years. He went to Bath in 1866 and married Harriet A. Smith.

Dr. Smith was a true type of the old-school physician, was proud of his profession, and a close student. He was a prominent member of the Steuben County Medical Society, had been its president, and was always present at its meetings. He had served the county as coroner, had been a member of the board of pension examiners, and was at the time of his death the town health officer. He was not only devoted to his profession, but a disciple of the Great Physician, and he gave doubtless as much thought in his later years to the diseases of the soul as to those of the body. He was a Christian physician, and as the faithful teacher of a Bible class in the Presbyterian Church he did a work that will stand as a monument to his memory. He was a high-minded, well-informed, useful citizen.

Dr. Smith's wife and three children survive him: Miss Alice Smith and Edward R. Smith, of this village, and Dr. Douglass H. Smith, of Buffalo.

WILLIAM WESLEY CLARK, M. D.

While attempting to rescue a young man, on the afternoon of July 12, 1905, Dr. Clark was himself drawn down by the weight of his clothing, and drowned. He swam to the boy's aid, started him for the shore, felt himself sinking, and called for help for the boy, who was rescued.

Dr. Clark was 41 years of age, an alumnus of the Albany Medical College of the class of 1894. He had practiced successfully and acceptably at Maine, N. Y., for 12 years. He was prominent in Masonic circles, a member of the Broome County Medical Society, and served as a member of the town school committee for a number of years. He is survived by his father and mother, who reside at Barton, N. Y., and by two sisters.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Operative Surgery. BY JOSEPH D. BRYANT, M. D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent's Hospitals; Consulting Surgeon to the Hospital for Ruptured and Crippled, Woman's Hospital, and Manhattan State Hospital for the Insane; former Surgeon-General of N. G. N. Y.; Fellow of the American Surgical Association; Member of the International Society of Surgeons, and of the American Medical Association; former President of the New York Academy of Medicine, and of the New York State Medical Association; President of the New York State Medical Society, etc. Volumes 1 and 2. Fourth Edition, Printed from New Plates. Entirely Revised and Largely Rewritten. New York and London: D. Appleton & Company, 1905.

The ever increasing demand for the third edition of this work, together with the advances made along certain lines of surgical technique during the past five years, have prompted the author to prepare the fourth edition. The general arrangement and scope of the work has not been materially changed, although considerable new subject matter has been introduced and much of the old has been rewritten. The two volumes in which the work appears contain about two hundred and fifty pages and two hundred and thirty illustrations more than the last, and both volumes are brought out at once. Two years elapsed between the appearance of volumes I and II of the third edition, while the work in its present form can be regarded as absolutely up to date.

The first volume, which contains 737 pages and 898 illustrations, of which 61 are colored, is subdivided into 13 chapters. The first four chapters comprise the general considerations of surgery, the control of hemorrhage, the treatment of operation-wounds and the ligation of arteries. The subject of anaesthetics has been rewritten by Dr. Bennett and is in every way most complete and satisfactory. Chapters V and VI cover the surgery of the veins and the nervous system; while chapters VII and VIII present an exhaustive study of the surgery of tendons, ligaments, fascias, muscles and bursae and the operations upon bones. Chapters IX and X present in detail the principles and methods of amputation. In chapters XI and XII the surgery of deformities and plastic surgery is exhaustively considered; while chapter XIII is devoted to the surgery of the mouth, pharynx, nose, oesophagus and neck.

Volume II contains 790 pages and 895 illustrations, of which 39 are colored. This volume is subdivided into five chapters, of which the first deals with the operations upon viscera connected with the peritoneum. This chapter comprises more than half of the volume and is a splendid presentation of the subject with all the newer operations proposed and practiced. The second chapter, which treats of the operations upon the

anus and rectum has been largely rewritten and is most satisfactory. Operations upon the thorax and neck is the subject of the third chapter. The two concluding chapters of the volume are devoted to the operations upon the urinary bladder, the scrotum, penis and miscellaneous operations.

Every page of both volumes speaks for the most careful work in preparation and all unnecessary subject matter is eliminated. The illustrations, which are most profuse, are unusually well executed, and are so arranged as to really illustrate the subject matter.

The index has been very carefully prepared and is a noteworthy feature of the work and one which adds greatly to its value. The author makes no effort to discuss the etiology, pathology or diagnosis of surgical disorders, but confines his attention exclusively to the operative treatment. The work is simply invaluable to the surgeon and a great credit to the author and publishers.

A. W. E.

A Practical Treatise on Fractures and Dislocations. BY LEWIS A. STIMSON, B. A., M. D., LL.D. (Yale.), Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson St. Hospitals; Consulting Surgeon to Bellevue, St. Johns, and Christ Hospitals; Corresponding Member of the Société de Chirurgie of Paris. Fourth Edition, Revised and Enlarged. Lea Bros. & Co., New York and Philadelphia, 1905.

The fact that this work has already run through three editions and that a fourth is now presented, affords the best possible evidence of the usefulness and popularity of the work. In the present volume the author has brought the entire subject of fractures and dislocations up to date and as a result of extended studies with the X rays has added much that is new and of interest. The material for this work has been drawn mainly from the Hudson Street Hospital, where such splendid opportunities for the study of rare and unusual accidents are offered. Each edition of the work has contained more and more of the writer's personal experiences and less of subject matter collected from other sources.

Especial attention has been directed toward the subject of carpal fractures and dislocations, which until comparatively recently have received but little attention. It is hoped that in this way many permanent deformities of the fingers and hands may be avoided.

The chapter on "Fractures of the Lower End of the Humerus" has been re-written and the mode of treatment somewhat modified, with, we believe, a probability of better results.

The operative phases of various fractures has also received more attention, with undoubtedly more rapid and certain results. The operative treatment of old dislocations is also considered in detail and strongly advised in suitable cases.

The volume begins with a series of chapters devoted to the general consideration of fractures, as the pathology, etiology, symptoms and diagnosis, complications and consequences, treatment, and delayed, faulty or vicious union with the general prognosis. In the following chapters all varieties

of fractures are treated of in great detail, especial attention being paid to fractures of the vertebrae and spinal cord injuries.

In a similar manner, the part of the volume devoted to dislocations begins with a series of chapters upon the general considerations, followed by chapters dealing with all forms of dislocations, both congenital and acquired.

Each variety of fracture or dislocation is discussed in great detail and the mode of treatment is clearly and concisely indicated. The volume contains 844 pages and is most profusely and intelligently illustrated, there being 331 illustrations and 46 plates in monotype. Unlike many works of this kind, there is no superfluous subject matter, and we feel that Dr. Stimson has furnished a true classic, without which the library of physicians and surgeons is incomplete. It is certainly not too much to say that this volume in its present form is incomparably better than any work upon this subject which has ever appeared in the English language.

A. W. E.

Chemical and Microscopical Diagnosis. BY FRANCIS CARTER WOOD, M. D., Adjunct Professor of Clinical Pathology, College of Physicians and Surgeons, Columbia University, New York; Pathologist to St. Luke's Hospital, New York. With One Hundred and Eighty-eight Illustrations in the Text and Nine Colored Plates. New York and London, D. Appleton and Company, 1905.

This volume of 745 pages is well printed on fine paper and is very well illustrated. The plates found in the chapters on the examination of the blood are especially clear and accurate. The illustrations of the changes taking place in the blood in anemia and the representations of the malarial parasite are perhaps the most satisfactory that have appeared in any of the textbooks. The field covered by this book, that of chemical and microscopical diagnosis, has been so often treated before that it would seem that nothing new could be said on the subject were it not that methods of study are continually changing. This work is certainly strictly up-to-date and all the most important of the later staining methods and instruments are described. A special section is devoted to the identification and study of mosquitoes. The various aspects of the question of the significance of the Widal reaction and other serum reactions including the precipitin test are thoroughly discussed. The chapter on the examination of the gastric contents includes the practical clinical tests which have been found to be most satisfactory. The chapter on the feces is unusually complete. A special feature of the book is the series of original illustrations of urinary sediments, some of them apparently from micro-photographs. Cytodiagnosis of normal and pathological fluids is fully discussed and methods of procedure given in detail. Inoscopy, lumbar puncture and animal inoculation are treated in special sections. An entire division is devoted to the chemical and bacteriological examination of milk. The appendix contains numerous useful formulae and tables.

In conclusion: though the book is not very different from some of its predecessors it presents the subject in a very satisfactory way and should prove a very valuable clinical laboratory manual.

A. T. L.

A Text Book of Obstetrics. By ADAM H. WRIGHT, M. D., Professor of Obstetrics, in the Medical Faculty of the University of Toronto, Ex-President of the American Association of Obstetrics and Gynaecology. D. Appleton & Co., New York, 1905.

This new work by a prominent teacher in his department is an eminently practical one, omitting the tedious discussion of theories and presenting only the facts which experience and study have proved of especial utility.

The book is divided into two parts, (1) Physiological Obstetrics, covering the work of the first year's study of the subject; and, (2) Pathological Obstetrics, mainly operative obstetrics, the second year's work.

The author gives but little space to the consideration of the anatomy of the subject, although the chapter on embryology has been presented in an interesting, concise and practical form. The second part is especially valuable. The chapter on Ectopic Gestation is particularly good, as is also the consideration of Tuberculosis and Cardiac Disease in Pregnancy. The subject of Eclampsia is thoroughly discussed and in line with the most recent investigations. No work has covered the treatment of this condition in a more satisfactory manner.

One noticeable feature of this work is the interesting and forcible style in which it is written. The personality of the author appeals to the reader and while he has evidently availed himself of the results of a comprehensive study of the literature of obstetrics, the methods of treatment are distinctly his own and are presented with convincing clearness and careful detail. For this reason the work will be found of greatest value to the general practitioner who must necessarily meet occasionally with difficult cases.

H. JUDSON LIPES.

Practical Pediatrics. A Manual of the Medical and Surgical Diseases of Infancy and Childhood. BY E. GRAETZER and HERMAN B. SHEFFIELD. F. A. Davis Company, Philadelphia, 1905.

It requires more than a good imagination to recognize Graetzer's *Vademecum der Kinderpraxis* in the volume before us. The metamorphosis gives great credit to the translator, publisher and the English language. The German edition is a duodecimo volume of 382 pages, while the translation is an octavo book of 544 pages. This book is merely an abbreviated encyclopedia covering the entire domain of pediatrics. One wonders wherein lies the value of such a work. It does not come under the category of a quiz compound and it is too superficial to meet the demands of a text book and is of doubtful utility as a book of reference. Dr. Sheffield, ably and materially aided by the F. A. Davis Company, has given to the book any value or merit it may possess. Thirteen pages are given to infant feeding, while thirty-six are required to discuss congenital malformations. We are warned that the view commonly held that scorbutus in children and Barlow's disease are the same is "decidedly incorrect" and these two diseases are described separately. Malnutrition, marasmus and athrepsia are grouped in the term *pedatroph* and the

whole subject disposed of in a page and a half. Instances similar to these could be multiplied.

Part II, devoted to *Materia Medica* and *Therapeutics* is more valuable. Credit must be given to Sheffield who has written the greater part. A large number of the unofficial drugs and many of the so-called newer remedies are described. The dosage is not always reliable as, for instance, the dose of codeine is given as one one hundred and twentieth of a grain for a child one year old while that of heroin is said to be one two hundredth of a grain for a child three years old.

We would say that this condensed treatise on pediatrics is anything but practical.

H. L. K. S.

MEDICINE

Edited by Samuel B. Ward, M. D., and Hermon C. Gordinier, M. D.

A Contribution to the Clinical Diagnosis of Intrathoracic Lesions.
(*Ein Beitrag zur klinische Diagnostik der intrathorakalen Erkrankungen.*)

A. GRÖBER. *Deutsche Archiv für klinische Medizin*, Bd. LXXXII, Heft 3 u. 4, S. 241.

Gröber emphasizes the value of irregularity in the size of pupils as a sign of intrathoracic disease, not only when it is in the mediastinum a location to which such pupillary irregularity, when not a sign of nervous or ocular disease, has long pointed as the probable seat of some lesion, but also in disease of the apex. This irregularity he explains not upon Eichhorst's theory that it is a paralysis of the sympathetics with a consequent pupillary contraction on the affected side, but as a stimulation of these nerves causing a dilation of the pupil. The stimulation is brought about in one of three ways: (1) irritation from neighboring inflammation, (2) traction by adhesions, (3) pressure from a new growth or a voluminous consolidated lung. Paralysis of the sympathetics supervenes only upon severance of the continuity of the nerve fibres through strangulation from old contracting scar tissue or through pressure from a tumor mass.

The main part of Gröber's paper is taken up with a consideration of two new signs which he states are of the greatest value in the early diagnosis of intrathoracic lesions. One of these signs is a vascular and the other a pupillary phenomenon, the latter being a modification of the simple pupillary irregularity which has been noted above. The two phenomena are both dependent upon the same simple method of procedure, which is merely to cause the patient after a maximal inspiration to attempt to force out the air through a closed glottis, or when manually holding shut the nose and mouth. When this is done by a normal individual the jugular veins become distended at once followed by the superficial veins of the chest, and of the clavicular and deltoid regions. The distension of these veins moreover is simultaneous and equal on the two sides. With changes in the relative intrathoracic

pressure on the two sides due to disease of the lung, etc., this finding is altered, and we find the veins on the affected side are distended more quickly and to a greater extent than those on the normal side. This phenomenon has an equal value whether the veins are previously visible unilaterally or bilaterally, and if the latter whether equally or unequally. Should the procedure which he advocates render the already more prominent veins (*e. g.*, on the right side) still more prominent, the diagnosis would be a lesion on the side indicated (in the case given, the right), but should the previously less prominent or invisible veins be made the more prominent, a bilateral lesion would be indicated. Though the presence of this phenomenon is a positive evidence of the existence of an intrathoracic lesion in certain locations, its absence does not signify there is no lesion present elsewhere.

Normally the size of the pupil decreases slightly with expiration and increases slightly with inspiration, a fact depending upon the relation of intraocular to intrathoracic pressure. If now, a normal individual undertakes a forced inspiration followed by an attempted expiration as indicated above, the pupils at first enlarge slightly and then at the moment when the attempt at expiration begins they slowly contract, reacting simultaneously and equally on the two sides. Gröber gives the following relationship between an abnormal reaction and an intrathoracic lesion:

(1) If one pupil contracts normally but the other widens, a lesion exists on the side of the widened pupil.

(2) If the two pupils widen (equally or irregularly) instead of contracting, there is a bilateral lesion.

(3) If a previously existing pupillary difference is increased there is a lesion on the side of the wider pupil.

(4) If a previously existing pupillary difference is decreased or reversed, there is a bilateral lesion. As in the case of the venous phenomenon though a positive result betokens intrathoracic disease, a negative result does not signify that none is present.

According to Gröber though either sign is indicative of an apical lesion they are otherwise differential. The pupillary reaction is most frequently found with diseased conditions in the posterior mediastinum, such as true or inflammatory tumors, scoliosis, aortic aneurisms, pleural synechiae, etc., while the venous reaction is more usually seen with affections of the anterior mediastinum. The only essential for the pupillary reaction is the location of the lesion in close proximity to the sympathetic plexus particularly the three upper communicating branches. This condition is often fulfilled by incipient apical tuberculosis as this, according to Birch-Hirschfeld, is found earliest in the region of the post apical bronchus. The exact location of the intrathoracic lesion can be fairly accurately determined by noting the veins which first dilate and remembering their relation to the larger venous trunks.

Gröber gives in detail several illustrative case histories explaining these phenomena and a large table of cases showing the relation of the findings to the diagnosis.

Non-fatal Rupture of Aortic Aneurysm.

CHARLES H. MELLAND. *The Lancet*, November 19, 1904.

It has been commonly accepted that free rupture of an aortic aneurysm was necessarily fatal within a period of a few minutes. A small number of cases have been recorded in which life has been maintained for several weeks, months, or even years after such rupture has occurred. Ferrey, in recording a case of this nature, gives short histories of eight other cases which he gathered from the literature. His case had profuse haemoptysis two years before death, and at the necropsy there were found, besides the evidence of recent rupture into the lung, old scars in the sac which represented the healed site of the previous rupture. The eight cases to which he referred lived from three days to ten months after the rupture. Gairdner in his work on clinical medicine refers to three cases, one of which was the celebrated surgeon Liston. He had a large hemorrhage suggestive of a free rupture of the aneurysm but this was succeeded by a quiescent period of three months. At the autopsy the trachea was found to be perforated in several places and portions of the aneurysmal clot were discovered projecting through the openings blocking them and preventing further hemorrhage.

The author's case was admitted to the Manchester Royal Infirmary with the history of having brought up a large amount of blood while at his work. He was collapsed, barely conscious, almost pulseless and absolutely blanched. The pulse was weak and very rapid. He appeared to be moribund but as the hemorrhage had ceased, two pints of normal salt was injected into the basilic vein. He rallied and improved rapidly during the next three weeks. The heart was enlarged; there was dullness in the second left interspace just outside the edge of the sternum, there was no abnormal pulsation but distinct tracheal tugging and inequality of the pupils; the pulses were unequal. Improvement continued for over three weeks, when he had another severe hemorrhage from which he rallied with the same treatment, but after three days absence from bleeding it was renewed and ended fatally. At the autopsy a saccular aneurysm was found which arose from the convexity of the arch immediately beyond the left carotid about the size of a hen's egg. Posteriorly the aneurysm had extended and insinuated itself between the trachea and the œsophagus. The trachea was compressed, macerated and softened and in this softened area there was a vertical slit three-eighths of an inch in length, through which the bleeding had occurred.

Acute Dilatation of the Heart.. (Zur Frage der akuten Herzdilatation.)

STARCK. *Muenchener medizinische Wochenschrift*, 1905, No. 7.

The writer describes the following case in detail. The patient was a strong youth of twenty years who in childhood had had scarlet fever and influenza and at seventeen while in the marine service had a diarrhoea lasting three months. Three years later he complained of his first cardiac pain after a strenuous bicycle tour in the mountains. That evening he had a collapse of the heart with cardiac pain from

which he quickly recovered in the course of a day. On the following day no organic change was discoverable. A month later there was slight dilatation with weakness of the cardiac muscle. In spite of abuse of alcoholic stimulants he had no cardiac difficulty until four and a half months later at a fencing bout which was completed with many interruptions. In his second fencing bout, two and a half weeks afterwards, he had cardiac pain, a pulse rate of 160 and a transitory collapse. A slight dilatation of the heart to the left was determined at this time. A third bout was suspended on account of severe cardiac pains and a high pulse rate (160). Examination half an hour later showed an enormous dilatation of the heart. The upper border was the second intercostal space, the right border at the mid-sternal line and the left at the anterior axillary line. The sounds were pure but the cardiac action was irregular in frequency and strength. An X-ray picture confirmed the finding on percussion. At an examination eight hours later the heart was reduced to its previous size—from the left sternal border to slightly beyond the papillary line. The physical exertion was not alone to blame for this sudden cardiac insufficiency since he had fenced each day of the semester for one hour, but the mental influence with involvement of the nervous apparatus was responsible. Even more striking than the acute dilatation is the rapid return to normal. On that account the author gives the nervous influence prominence and claims that we know too little of the influence of the nervous system upon the tone of the heart muscle to draw a final conclusion on this question.

Contribution to the Pathology of Basedow's Disease. (Beitrag zur Pathologie der Basedow'schen Krankheit.)

H. PASSLER. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, XIV Band 3 Heft.*

According to the theory of Moebius and his followers the symptoms of Basedow's disease are due to a poison resulting from an abnormal activity of the thyroid. To this activity is given the name of dysthyreoidismus. In support of this theory are advanced not only the clinical features of the disease but the fact that improvement or cure of the disease may follow a resection of the thyroid, and furthermore the fact that the feeding of the thyroid gland to men or animals may cause certain of the symptoms of Basedow's disease, and finally the fact that operations upon cases of Basedow's disease are not infrequently associated with fatal accidents which appear to be due to the action of some toxine. This many writers believe to be due to an intoxication resulting from the specific poison of Basedow's disease. To determine the presence of such a poison experiments have been performed in which portions of the thyroid gland removed from cases of Basedow's disease have been inoculated into animals. Boinet dried these glands at 50° C., pulverized them and inoculated the powder into young guinea pigs. These animals died of cachexia while control animals who received the same quantity of powder from normal thyroids or ordinary goitres manifested no serious symptoms.

Soupault, whose experiments were performed prior to Boinet, came to the conclusion that there was no difference between the toxic action of the thyroid of sheep and of cases of Basedow's disease. It is possible that the results of the experiments of Boinet may have been due to an affection or intoxication resulting from bacterial action since no mention is made of aseptic precautions.

The writer reports a typical case of Basedow's disease, the left lobe and isthmus of which was resected. The fresh gland was extracted with normal salt solution with the addition of a little chloroform in such a way that it was quite sterile, after which the chloroform was evaporated in a water bath at 37° C. This extract was then injected into the arteries of the animals experimented upon.

As an indicator of the action of this extract the writer relied upon the pulse inasmuch as it is one of the most characteristic symptoms of Basedow's disease. One can assume that if the disease is due to a specific poison the injection of this poison will certainly cause an increase in pulse rate. As a result of his experiments it was demonstrated that the intravenous injection of large quantities of the extract of the thyroid of Basedow's disease causes no increased frequency of the pulse. One must bear in mind the possibility that the poison of human Basedow's disease is inactive in rabbits and dogs, although this is very improbable in the case of dogs, which species of animals occasionally manifests the typical disease. It is also possible that there must be present a certain nervous predisposition, which fact seems to be substantiated by the occurrence at times of Basedow's disease after pronounced mental or nervous shock. It is also possible that the poison of Basedow's disease manifests its activity only after a more or less long continued action. The experiments however seem to show that the poison of Basedow's disease, if it exists, does not manifest a simple direct toxic action such as a ptomaine upon the circulation of warm blooded animals.

Acute Rheumatic Myocarditis. (De la Myocardite Rhumatismal Aigue.)

MAURICE MICHEL. *Archiv generals de Medicin*, 1905, LXXXII, 13.

Until recently the only affections of the heart in connection with acute articular rheumatism that were observed or described have been inflammations of the endocardium and pericardium.

Bacteriological researches have shown that in certain exceptional cases the endocarditis has been very severe, suggesting the endocarditis seen in certain severe infections, but even in these cases the myocardium has not been affected. There have, indeed, been certain isolated cases where a lesion of the muscle was diagnosed and Besnier refers to such cases in his article in the "Dictionnaire Encyclopedique," but the clinician had not reported many cases, nor had the pathologist shown it to be a frequent occurrence.

It is only since the studies of the Lyon school were begun, including the researches of Bret, Weil et Barjon, Bouchot, Merklen et Rabe, Barie, Tessier, Chomet and Janot, that lesions of the myocardium have been actually demonstrated in the course of rheumatic fever. It appears ac-

according to these researches that the affection of the heart muscle usually simulates a general cardiac breakdown producing symptoms suggestive of acute dilatation of the heart. This can be easily understood from the histological lesions seen after autopsy. There may be, perhaps, milder degrees of rheumatic carditis which show themselves by signs less alarming and which demand further research. An observation of Peter calls especial attention to the "Bruit de Galop," as a characteristic sign in such cases.

An explanation of the mechanism of this pathological sound is difficult, but the fact remains that it is an important physical sign which has been passed over in silence by the text books.

While the author was at the Beaujon hospital he saw a young man with acute articular rheumatism, in whose case the heart showed symptoms of the condition we are studying. He calls special attention to the occurrence in this case of the gallop rhythm and its relations to the albuminuria which also was noted.

Clinical History. The patient is a young man seventeen years old, a dairyman's boy. He entered the hospital September 6, 1904. Family history is negative. The patient had an attack of acute articular rheumatism when seven years of age from which he made a complete recovery. During this attack there was no cardiac involvement nor has he had any symptoms of heart trouble since. The beginning of the present attack was on August 25th. Without initial sore throat he noticed a vague pain in the left knee which made it hard for him to walk, but did not entirely prevent his walking. The pain was less the next morning, but again became more severe than ever after some hours. On the 4th of September the patient went to bed. His ankles, elbows, shoulders and wrists were successively invaded in the order named. On the 6th he entered the hospital. At that time there was severe pain in all of the joints attacked and a slight reddening of the skin about the joints. The swelling was not very marked except about the knees and the wrists, which seemed to be especially affected. The patient perspired freely; temperature was 39 degrees; the tongue was lightly coated; the urine diminished, high colored and contained, after complete absorption of salicylate of soda a marked quantity of albumin. There were, however, no lumbar pains, oedema, headache, nervous or digestive troubles. Respiration was not accelerated and was easy. Pulse rate: 54 beats per minute. The pulse was irregular and every third or fourth beat was dropped.

Heart. The apex beat was at the level of the fifth rib; the heart sounds were distant; the bruit de galop was heard with most distinctness at the chondrocostal end of the fourth rib on the left side. The bruit was not modified by the pressure of the stethoscope or a sitting posture. No valvular murmur nor friction sound was detected. There was no precordial pain and no palpitation.

Treatment. Methyl salicylate was applied to the affected joints. September 7th, pain less marked. On account of the fever (39.1 degrees) four grammes of salicylate of soda were given in spite of the presence of albumin in the urine. The same evening the albumin was increased; the

salicylate was discontinued and the next morning the albumin was a little diminished. On September 8th, the temperature was 40.1 degrees. Salicylate of soda was again used in fractional doses of fifty centigrammes each until four grammes were reached. The pains persisted, the "bruit de galop" was less distinct.

September 12th. In spite of the salicylate treatment the albuminuria was markedly diminished, the "bruit de galop" was less plain. September 15th, at the apex a soft murmur was heard. The albuminuria had disappeared and the "bruit de galop" was no longer perceived. September 16th, arrhythmia less marked, pulse 64, the blowing murmur at the apex less distinct. September 21st, critical polyuria. September 23d, return of the pain. Persistent arrhythmia, coated tongue, diminished urine, presence of albumin. No "bruit de galop." During the next four days the temperature returned to normal and the albuminuria became less and finally disappeared. The patient had practically recovered September 30th.

It will be noted that in this case there was present along with the "bruit de galop" albumin in the urine, nevertheless it does not seem that the cardiac trouble arose from the renal condition. In the first place the albuminuria was never very marked and it did not last very long. Besides, the albuminuria lasted longer than the "bruit de galop." The albuminuria reappeared during the relapse but the "bruit" was not heard at this time. If there were a very close relation between the two this disassociation of the times of appearance of the two phenomena would not probably have been observed. Finally, during the convalescence of the patient an arrhythmia of the heart action was noted analogous to that which, for example, may be met with after typhoid fever, and which banished completely the idea of a renal influence in the production of this trouble. It would appear then that the various disturbances noted in the cardiac mechanism ("bruit de galop" in the acute stage, arrhythmia during convalescence) may be charged to the account of an affection of the myocardium. It is probable that the alteration of the muscular tissue is produced in the same way as the acute infections of the myocardium in the course of typhoid fever, diphtheria, etc. The arrhythmia noted during convalescence and the bradycardia evidently show that the action of the rheumatic poison on the heart was prolonged, and that it did not produce an organic lesion. This is the only satisfactory explanation of the appearance of the different symptoms of the patient.

In this case one might perhaps, suppose that there occurred an infectious neuritis of the cardiac nerves themselves, as has been observed in the course of certain infectious diseases, and the frequency of the occurrence of which is much more common than one would suppose according to M. Huchard. The thing is possible, at least to a certain extent, and within limits which we cannot define precisely. But it is probable that the affection of the cardiac fibre was much more important in the producing of the symptoms which we have noted.

Regarding this patient, if it were possible to follow his history the future would show just how seriously the fibres were affected, and whether some day or other there will not be a chronic sclerotic, myocarditis.

PATHOLOGY AND BACTERIOLOGY

Edited by Richard Mills Pearce, M. D.,

Assisted by E. MacD. Stanton, M. D., and Charles K. Winne, Jr., M. D.
*The Longevity of the Typhoid Bacillus in Water.*E. O. JORDAN, H. L. RUSSELL AND F. R. ZEIT. *The Journal of Infectious Diseases*, 1904, I. 641.

* This work is essentially an attempt to test experimentally the self-purification of streams. The work was done with the waters of Lake Michigan, the Chicago Drainage Canal and the Illinois River. The ultimate object was to determine whether the typhoid bacillus could survive the passage from the Drainage Canal to the mouth of the Illinois River. Previous attempts to determine the longevity of the typhoid bacillus have been made for the most part in glass vessels in a laboratory. These have led to conclusions widely differing except on two points: first, that typhoid bacilli die out more rapidly in unsterilized water than in the same water sterilized by heat; second, that the greater the degree of organic contamination of a water the more rapidly the bacilli disappear.

In order to subject the organisms as nearly as possible to natural conditions, permeable sacs of celloidin or parchment were employed which were filled with water at the various stations and then inoculated with typhoid bacilli. The sacs were then suspended in running water at the respective stations. By the use of such sacs, which readily allow osmosis the bacilli within the sacs were subjected to practically the same factors as organism in the water surrounding the sacs. In some experiments a glass tube from the neck of the sac projected above the surface of the water and allowed also an interchange of air and gases.

As the result of a very extensive series of investigations it was found that in the sacs from the drainage canal with one exception no typhoid bacilli were found later than two days after inoculation. The decrease in numbers appears to be most marked between twenty-four and forty-eight hours. In the lake water the bacilli could be found four days after inoculation. In one drainage canal experiment typhoid bacilli were recovered nine days after inoculation.

Conclusions:—

(1) Under the conditions of the experiments, which probably closely simulate those in nature the vast majority of typhoid bacilli disappear within three or four days. (2) It is theoretically possible that specially resistant cells may occur which are able to withstand for a longer period the hostile influences evidently present in water. The experiments show however, that such constitute but a small fraction of the bacilli originally entering water. (3) the behavior of typhoid bacilli as described in these experiments may not be representative of all conditions obtaining in all natural bodies of water.

*The Antagonism Exhibited by Certain Saprophytic Bacteria against the Bacillus Typhosus Gaffky.*W. D. FROST. *Journal of Infectious Diseases*, 1904, I, 599.

The paper is a record of experiments performed for the purpose of determining the effect of association of other bacteria on typhoid bacillus.

Collodion sacs containing broth or sterile water were inoculated with the typhoid bacillus and then immersed in bouillon cultures of various saprophytic bacteria.

The results may be summarized as follows:

Mixed cultures of soil and water bacteria exert a distinctly antagonistic action on *B. typhosus*. This antagonism results in not merely checking growth but in actually killing the organism; in some cases the killing off amounts to extinction. The death rate is more rapid when the opposing organisms are allowed to develop their by-products before the typhoid bacillus is introduced. Control experiments indicate that no antagonistic substance exists ready formed in either soil or water.

According to the opinion of the writer this antagonism is not due to the exhaustion of the food supply, the action of proteolytic enzymes, specific poisons or the production of acid or alkalies. He does not however offer any explanation.

The Pathology of the Pancreas (Zur Pathologie des Pankreas). Virchow's Archiv, 1904, CLXXVII, Supplementheft, 1-160.

- I. SAUERBECK, E., *Die Langerhansschen Inseln im normalen und kranken Pankreas des Menschen, insbesondere bei Diabetes mellitus.*
- II. SSOBOLEW, L. W., *Ueber die Struma der Langerhansschen Inseln der Bauchspeicheldrüse.*
- III. GUTMANN, C., *Beiträge zur Histologie des Pankreas.*
- IV. ARLER, H. M., *Zwei Fälle von Pankreascyste.*

Sauerbeck reviews in detail the literature referring to the islands of Langerhans emphasizing especially the evidence in favor of the anatomical and physiological independence of these structures. He has collected from the more recent literature 157 cases of diabetes in which the islands have been the object of special study. In forty of these, or twenty-five per cent., the islands were normal; in all others some change was evident. The changes are classified as follows: entire absence even diminution in number, twelve; altered structure, ninety-eight. Under alteration in structure come haemorrhage, fatty degeneration, acute and chronic inflammation, simple atrophy, sclerosis, hydropic and hyaline degeneration. Hyaline degeneration and chronic inflammation are the more important changes.

The writer's own work consists of a study of the histology of the islands in the normal and the diabetic pancreas and the changes which may occur in the islands in various diseases other than diabetes. The study of the normal pancreas is thorough and though confirming recent observations of Opie and others adds nothing essentially new. In non-diabetics the following lesions of the islands have been found; in chronic passive congestion, haemorrhage; in simple atrophy, great increase in size and number; in chronic pancreatitis, haemorrhage and pigmentation and occasionally thickening of the capsule but no invasion of the island itself; lipomatosis of pancreas, no changes except an occasional haemorrhage or capsule formation. Of special interest is the absence of retrogressive changes in cancer of the pancreas. In this lesion the islands persist both in the newly formed connective tissue and in the midst of the tumor cells. In-

vasion of an island by cancer was observed in but one instance. In a variety of serious lesions of the pancreas unaccompanied by diabetes. Sauerbeck has, therefore, been unable to demonstrate important changes in the islands and adds new evidence in favor of their resistance to changes affectioning the glandular elements of the organ.

Seventeen cases of diabetes were examined. In none were the islands absent; in nine, a greater or less diminution in number was evident. The diminution in numbers was determined by actual count and by comparison with the smallest number found in the non-diabetic pancreas. A uniform diminution in size in any one case, as described by Herxheimer, was not seen. The structural changes included two cases with well marked sclerosis, six with varying grades of hyaline degeneration and one of atrophy. In the other nine cases the islands showed slight changes or were normal.

This work of 123 pages with its tables and general summaries is the most comprehensive of recent contributions to the pathology of the islands of Langerhans and the problem of their relation to diabetes. Observations pointing to the independence of the islands, the absence of serious lesions of the islands in the non-diabetic pancreas, and the presence of lesions in a considerable portion of the diabetic organs all support the newer views concerning the relation of the islands to sugar metabolism.

II. Sobolew in the pancreas of a diabetic with atrophied, hyaline and sclerotic islands found a greatly hypertrophied island measuring one and five-tenths millimetres in diameter and visible to the naked eye. Various stages of hypertrophy were evident in the other islands. He is inclined to consider this an example of vicarious hypertrophy, an attempt to compensate for the loss of function of the atrophied and hyaline islands. The other probability, that it is an example of primary adenoma of the island, he considers improbable. His illustration, however, would appear to support the latter supposition.

III. Gutmann describes fourteen cases of diabetes. The pancreas in one was the seat of cancer; two showed no changes; in six, the granular atrophy of Hanseman was evident; in five, simple atrophy and in one, chronic pancreatitis and fatty infiltration. Of these but ten were available for histological study. The islands were easily found in all. The lesions of the islands consisted of hyaline degeneration in two cases; atrophy in two, and "round cell" infiltration in one. A doubtful diminution of the number of the islands is noted in four cases. The vacuolization and hydropic degeneration described by Weichselbaum and Stangl was not seen. In most of the cases Gutmann found changes in the glandular portion of the organ. He comes to the conclusion that in the present state of our knowledge we must agree with Hanseman that the islands are in no way concerned in the production of diabetes.

IV. Adler describes two cysts of the pancreas. The first, a true pancreatic cyst, in a female, forty-two years old, was found at autopsy. It was adherent to the liver and stomach, measured 5 x 3 x 1.5 centimetres and contained about forty cubic centimetres of thick creamy fluid. The gall-bladder contained four stones, but there was no evidence of obstruction of the papilla of the duodenum. The pancreatic duct was patent throughout but had no connection with the cyst. The writer excludes the possi-

bility of retention cyst and of origin by inflammation or self digestion but gives no other explanation. The second cyst in a male fifty years of age likewise was found at autopsy. It was in relation with the stomach and had a dark greyish necrotic wall with somewhat similar contents. The writer considers it an example of pseudo-cyst secondary to haemorrhage.

Some Newer Aspects of the Pathology of Fat and Fatty Degeneration.

H. A. CHRISTIAN. *Johns Hopkins Hospital Bulletin*, 1905, XVI, 1.

Ideas concerning the occurrence of fat in the body, its sources and significance have greatly changed in the past few years. Fat may be demonstrated by two groups of methods: first, those visually demonstrating the fat within the tissues and second, those which separate fat from tissues. In the first group come those physical properties of fat tissues evident macroscopically such as the yellow color, greasy feel, indistinctness of normal markings and increased friability of the fatty liver and those microscopically evident as the high refraction of the fat droplets and its solubility relation. In the recognition of small amounts of fat, however, these criteria do not suffice; for example, in conditions of simple anemia it may be impossible to differentiate between the appearance due to anaemia and that due to fatty change. In order to determine the relation of fat to cell structure staining methods must be used. These include the negative method in which the fat is dissolved, leaving the vacuole and the positive methods which stain the fat as in the use of osmic acid, Sudan III, Scharlach R, and Indophenol.

It has been shown, however, that the osmic acid method is not always correct, and that of the methods mentioned Sudan III and Scharlach R are the more accurate. These substances as far as our present knowledge goes color all three forms of fat and only substances of a fatty nature. Indophenol is not largely used; it stains fat blue. Fat occurs normally in the body in the so-called adipose tissues and by extraction it can be demonstrated in practically all the organs. For example, in the normal kidney, in which almost no fat can be demonstrated in the cells by staining methods, Rosenfeld has found by extraction from 16 to 23 per cent. of fat. On the other hand the diseased kidney in which fat is evident microscopically may show upon chemical analysis no increase of fat over that of the normal kidney. In the liver fat is almost constantly present. It may also be found in the epithelium of the salivary glands, pancreas, adrenals, testes, ovary, thyroid, thymus, sweat and sebaceous glands and breast. The spleen and lymph nodes according to Herxheimer are the only tissues normally fat free. In the foetus fat is very scant but gradually increases in amount after birth, which indicates that it is the result of a metabolic activity of the cell and bears no relation to cell degeneration.

Christian quotes a number of cases in which various organs were examined for fat and reaches the general conclusion that it is associated with a very great variety of processes both chronic and acute. He then discusses the manner in which fat is deposited. In 1847, Virchow taught that the fat of fatty degeneration was formed within the cell as the re-

sult of the destruction of the cell proteid. This dictum has been accepted by pathologists until very recently. Later came the theory of Voit and Pettenkoffer, who claimed that the body fat was formed by ingested proteids. This view was attacked by Pflüger in 1891 and as the result of numerous metabolism investigations it is now generally accepted that fat is not formed by ingested proteid but from food carbohydrates and food fats. Voit's claim that fat is formed from proteid in adipocere, in the ripening of cheese and the secretion of milk has been disproven. It is now known that the first two are due to bacterial activity, while the fat of milk is known to come from body fat. It has been shown in phosphorus poisoning that the fatty degeneration of the liver cells is not due to the transformation of the proteid in the cell but that the fat comes from adjacent depots.

Lebedeff demonstrated this by finding linseed oil after phosphorus poisoning in the liver of fasting dogs which he had previously fed on linseed oil. Rosenfeld starved dogs until the body fat was reduced to a minimum. He then fed them on lean meat and mutton fat until their fat depots were filled with mutton fat. Again these dogs were starved until no fat remained in the liver. The administration of phosphorus now brought about a marked appearance of fat in the liver. Analysis showed this fat to have the composition of mutton fat which points to the transportation of the fat from the fat depots and not to a transformation of the proteid of the liver cells. Many similar instances have demonstrated that fat comes from the body fat by way of the circulation. Various observations upon the fat of granulation tissue, the caseous areas of tuberculosis, and kidney infarcts indicate that the fatty changes in these conditions is due to the introduction of fat by the circulation and not to changes in the cells themselves.

In the same sense, Christian believes that the fat found in the pneumonic exudate comes to the lungs in the leucocytes and is not due to a transformation of the cells of the exudate itself. Against the assumption that fat occurs in cells only as the result of transportation are the results obtained by the autolysis of organs and tissues preserved aseptically outside of the body. According to many observers fat droplets appear within the cells and here of course there is no circulation. There is no evidence, however, that this formation of fat is from the proteid of the cell; the possibility, however, cannot be denied.

Concerning Decapsulation of the Kidney. (Ueber die Entkapselung der Niere).

G. HERXHEIMER, AND J. W. HALL. *Virchow's Archiv*, 1905, CLXXIX, 153.

Herxheimer and Hall have carried out, on the kidney of the rabbit a series of decapsulation experiments in an attempt to answer the following questions:

- (1) Under what circumstances is a new capsule formed and what is the character of this capsule?
- (2) Under what circumstances is a collateral circulation established between the vessels of the kidney and those of the surrounding tissue?
- (3) How does the animal bear the decapsulation?

(4) Is the course of the changes in the kidney of the decapsulated animal different from that in normal animals?

In the first series of eight experiments the capsule of one or both kidneys was stripped. The animals were killed at intervals of from three to twenty-seven days. The animals bore the operation well and in none did albumen appear in the urine. At nine days a capsule had formed as thick as that of the normal kidney; at twenty days, a pale capsule thicker and more irregular than the normal. The capsule contained numerous small blood vessels, but there was no evidence of a general anastomosis with the vessels of the surrounding tissues.

In another series of rabbits an acute nephritis was produced by chrome alum; usually a dose of 0.75 c.c. of a 2.5 solution was sufficient to cause lesions. Of thirty-nine animals so treated, in twenty-six decapsulation was done twenty-four hours after injection; the others were reserved as controls. The injection of chrome alum produces albuminuria seldom reaching over one per cent, with abundant casts. Comparing the kidney of the animals not operated upon with those undergoing decapsulation, it was found that the latter had no effect in prolonging life, did not diminish the albuminuria, and did not alter the histological picture. It is, however, manifestly unfair to compare these investigations, dealing with an acute nephritis, with the operation described by Edbohl for the relief of a chronic nephritis.

Protective Inoculation Against Asiatic Cholera.

RICHARD P. STRONG. *Journal of Infectious Diseases*, 1905, II, 106.

Under conditions existing in the East, it is impossible to eradicate or even adequately combat by ordinary hygienic measures an epidemic of a disease such as Asiatic cholera. For this reason, and influenced by the experience of the American authorities in the Philippine islands, Strong has attempted by a new method to procure a satisfactory prophylactic.

Active immunization against cholera has previously been attempted by various investigators by means of modifications of two main methods: vaccination with living cultures, and the injection of killed cultures; feeding experiments and chemical vaccines have also been used. Owing to the brief immunity which they confer, the production of passive immunization by the use of antitoxic or bactericidal sera is of little practical value. The difficulties so far experienced in the application of these methods are due to the very severe local and general reaction caused by the injection of living cultures, and the slight value of the immunity induced by the inoculation of killed cultures.

All evidence tends to show that the toxin produced by the cholera organism is intracellular and is not excreted into the surrounding medium before the death of the bacterial cells. It has been found that the best growth of the cholera vibrio occurs in from twelve to twenty hours, after which time the individuals in the culture rapidly die off; this period of rapid growth and equally rapid death, in which the toxin is manufactured and liberated, corresponds to the period of the most severe clinical manifestations.

Bearing these facts in mind Strong has attempted to separate the immunizing substances from the bacterial cells by a process of autolysis of suspensions in normal saline of young agar cultures, as the antitoxic immunity produced is apparently, within certain limits, directly dependent upon the strength of the toxin introduced. Previous to the autolysis the cultures are killed by moderate heat, and after the autolytic process are filtered through a porcelain bougie. Material obtained in this way when injected in small amounts either intravenously or subcutaneously into rabbits is capable of producing good bactericidal and antitoxic immunity; an immunity which is much stronger than that produced by the injection of either living or killed cultures of the organism.

There was very little local or general reaction from inoculation of animals with this prophylactic material, even when given intravenously in proper amounts. Larger doses given directly into the circulation promptly caused death of the animal. The immunity thus produced lasted for at least three to six months; no experiments were carried out in this line over a longer period of time. The serum of such animals was capable of producing a fair degree of passive immunity in other animals.

The experimental immunity produced in human beings by inoculation of this prophylactic material was as satisfactory as that produced in animals. On account of the cessation of the epidemic of cholera in the islands there has been so far no opportunity of observing from a purely practical standpoint the value of this method. The local and general reaction following upon such inoculations into human beings is not severe. Injections were made deep into the muscles of the arm. Slight soreness on pressure existed for about twenty-four hours, occasionally slight reddening of the skin. There was never much pain, nor any suppuration. Occasional headache lasting for a few hours was complained of, and there was usually a rise of temperature of one to three degrees (Fahrenheit) which subsided in from twenty-four the forty-eight hours.

CLINICAL MICROSCOPY

Edited by Arthur T. Laird, M. D.

The Presence of Certain Bodies in the Blood of a Case of Severe Aenemia. (Sur la présence de corpuscules speciaux dans un cas D'Anémie Grave.)

E. LEFAS. *Archiv de Médecine Expérimentale*, 1905, XVII, 87.

The author studied a case of pernicious anemia in which examination of the blood showed beside the usual changes, certain intra and extra cellular bodies, the significance of which was not evident.

In dry unstained films there were seen in certain of the red cells shining bodies at least one μ . in diameter, usually circular in form, more rarely oval. Occasionally two of these bodies were seen in the same red cell. They were usually found at the junction of the middle and outer third of the red cell. A few similar bodies were seen outside of the cells, lying near or between them.

In preparations fixed in acetic sublimate or by remaining in absolute alcohol for three hours, these bodies were stained from violet to black by hemotoxylin, and a bluish purple color by methylene blue. Hemotoxylin showed them best.

The bodies were not always the same size; some were twice the size of others; occasionally they were found in the protoplasm of polynuclear leucocytes; none were found in mononuclear cells.

Preparations treated with acetic acid for the purpose of removing hemoglobin, were stained and the bodies were found to be not appreciably altered. Consequently they do not contain hemoglobin. In this patient the percentage of hemoglobin was 43, the red cells numbered 1,285,000, the white cells 5,200. The differential count showed 38 per cent. polynuclears, 40 per cent. of lymphocytes, 20 per cent. mononuclears and 2 per cent. eosinophiles. Two nucleated red cells were found for every one hundred white cells. There were also poikilocytes and polychromatophilia.

The author found similar bodies in the blood of two healthy rabbits. In both cases there was also a lymphocytosis.

A Simple Method for Estimating the Amount of Sugar and of Reducing Substances in the Urine. (Procédé simple de dosage du sucre et des substances reductrices dans l'urine.)

M. G. LIROSSIER. *Comptus Rendus Hebdomadaire, Société de Biologie*, 1905, LVIII, 258.

The determination of the amount of sugar in the urine by Fehling's solution by the ordinary method is not perfectly satisfactory on account of the opacity produced by the copper oxide deposit, its slow settling making it difficult to determine the exact instant when the decoloration of the blue liquid takes place. The author has found the following a more satisfactory clinical method: 20 cubic centimetres of Fehling's solution, 20 cubic centimetres of a 1.1% solution of potassium ferrocyanide (the smallest amount that will keep all the copper oxide in solution) and 40 cubic centimetres of water are mixed together and brought to the boiling point. The mixture is then cooled gradually by the addition to it from a burette of a solution containing five grammes of glucose and ten cubic centimetres of fuming hydrochloric acid in a litre. The blue liquid gradually becomes decolorized without the development of a precipitate; when the decoloration is complete the addition of an excess of the glucose solution produces a dark green color, the end reaction. This procedure determines the amount of the glucose solution necessary to reduce the twenty cubic centimetres of Fehling's solution and is only gone through with once.

To find the amount of sugar in the urine, there is added to the boiling mixture containing Fehling's solution, one to five cubic centimetres of urine supposed to contain sugar, and the reduction is then completed with the glucose solution.

The result is calculated as follows: suppose nineteen cubic centimetres of the glucose solution had been required to reduce the twenty cubic centimetres of Fehling's solution, and that in the second determination after the addition of two cubic centimetres of urine only seven cubic centimetres of the glucose solution were required. The two cubic centimetres of urine then contained the same amount of glucose as twelve cubic centimetres of glucose solution; twelve cubic centimetres of the glucose solution contained 0.06 gramme. The two steps in the procedure should be gone over, one after the other without any delay, the results are not as accurate if even a few minutes intervene between them. Albumin does not interfere with the test.

The following modification of the method can be used for the purpose of estimating small quantities of sugar in the urine. The modification eliminates the influence of reducing substances other than sugar. Add brewer's yeast to one portion of the urine and let the mixture stand twenty-four hours. A test made with this urine deprived of its sugar permits the recognition of other reducing substances and allows of making the necessary correction for them in the result obtained by testing unfermented urine. To estimate rapidly the amount of reducing substance in the urine in terms of glucose the test may be performed as follows: To twenty cubic centimetres of Fehling's solution add forty cubic centimetres of the 1.1 per cent. solution of ferrocyanide of potassium and ten cubic centimetres of urine, then add the glucose solution from the burette until the reduction is complete.

Studies on the Basophilic Granulations of the Erythrocytes in Lead Poisoning and other Conditions, with Special Reference to the Relations which they Bear to the Nuclei of the Red Blood Corpuscles.

WILLIAM B. CADWALADER. *American Journal of Medical Sciences*, 1905, CXXIX, 213.

In the routine examinations at the Pennsylvania Hospital it was noted that nucleated red cells were frequently found in association with granular cells. A study was undertaken to determine, if possible, what was the relation between these two phenomena. A review of the literature showed that the basophilic granules found in the red cells of the blood in severe anemias and in lead poisoning were considered by some authors to be due to a degenerative process affecting the hemoglobin of the red blood corpuscles, and by others to be the products of nuclei that had undergone dissolution. The author studied the blood of the following cases: (1) apparently normal individuals, (2) eleven lead workers without subjective symptoms, (3) sixteen cases of lead poisoning in the wards of the Pennsylvania Hospital, (4) various forms of primary and secondary anemias in the wards of the Pennsylvania Hospital. The following examinations were made in each case: (1) estimation of the percentage of hemoglobin, (2) estimation of total number of erythrocytes per one centimeter, (3) estimation of the total number of leucocytes per one centimeter, (4) differential count of 500 leucocytes and estimation of number of nucleated

red corpuscles, (5) estimation of percentage of red corpuscles containing basophilic granulations. The differential leucocyte count was made after preparing smears in the usual manner and staining them with Wright's stain. In studying the basophilic granules, Wright's and Jenner's stains, Theonin-phenique and Unna's polychrome methylene blue were tried as staining solutions. The last mentioned was found to be the most satisfactory.

The blood of five apparently normal persons was examined, and in each specimen red corpuscles containing basic-staining granules were present. These could only be found by using Unna's stain in the method recommended by Vaughn.

Eleven lead workers without subjective symptoms furnished specimens of blood showing only a slight reduction in the number of red cells and in hemoglobin, but all showing decided increase in the number of granular corpuscles, and some showing nucleated red cells.

The blood of sixteen cases of lead poisoning in the Pennsylvania Hospital showed but slight reduction of hemoglobin, and of red cells, but decided increase in granular cells, and in every case one or more nucleated red cells.

In ten cases of severe primary and secondary anemias the red corpuscles with granulations were found and were increased slightly, while if the blood contained nucleated red corpuscles the increase was very marked. The granules found in all these cases may be divided into three groups: (1) fine and coarse thread-like strands, (2) fine dot-like granulations, (3) dense, coarse mass. The first only were found in normal blood, the second most constantly in the blood of lead workers, the third especially in cases of lead poisoning, when nucleated red cells were present. The constant association of these granules with nucleated red cells leads the author to believe that they are the remnants of a pre-existing nucleus, and that the three types of granulations represent stages in the change from nucleated to non-nucleated red corpuscles; of these probably No. 3 is the first, and No. 1, the last stage. Consecutive examinations were made in three cases which showed that an increase in the number of nucleated red cells was followed by an increase in the number of granular cells. The author states as his conclusions: (1) that basophilic granules are normally present in small numbers of cells in the blood of man, (2) that nucleated red cells are common in lead poisoning and are always accompanied by an increase in the number of granulated cells, (3) the anemia secondary to lead poisoning, as a rule, is only of a moderate degree, (4) the granular cells most common in lead poisoning possibly have their origin in the blood forming tissues, and are probably the result of fragmentation of the nucleus of red blood cells.

ALBANY MEDICAL ANNALS

Original Communications

1865

1905

ANNIVERSARY MEETING OF THE OGDENSBURG MEDICAL ASSOCIATION.

Held at the Century Club, Ogdensburg, N. Y., September 5, 1905.

I. A BRIEF HISTORICAL SKETCH OF THE OGDENSBURG MEDICAL ASSOCIATION.

BY WILLARD N. BELL, M. D.,

President of the Association.

In the few moments allotted to us this evening it is, of course, impossible to give more than a cursory review of the past forty years of our Society's life and but a passing reference to its origin, membership, work and attainments. From the outset, by reading the various secretaries' reports one cannot fail to recognize that the quality of its original blood was good; that the spirit manifested was broad and liberal; and from the fact that during all these years, not a regular meeting has been missed, the interest to-day is greater than ever, one must acknowledge that the originators were progressive and possessed more than ordinary foresight. All societies have their fluctuations in interest, activity and attendance, but from the first meeting, this one has seemed to possess an inherent vitality that is surprising, and it is a credit to its members. The organization has done much to exemplify the benefits to be derived from such intimate acquaintance as it affords its members and this fact should encourage us to still more strenuous efforts for its future activity and advancement.

On August 29, 1865, pursuant to call published in the *Daily Journal*, Drs. B. F. Sherman, Z. B. Bridges, J. H. Benton, Robert

Morris, S. H. Rolfe, S. C. Crichton and J. R. Furness met in the office of Dr. B. F. Sherman for the purpose of organizing the physicians of Ogdensburg and vicinity into a society for "their mutual benefit and protection." At this preliminary meeting, Drs. Bridges and Morris spoke of the advantages of such an organization, dwelling upon the benefits to be derived from a more intimate personal and professional acquaintance with each other, and a committee composed of Drs. Bridges, Rolfe and Crichton was appointed to draft a Constitution and By-Laws. After a pleasant and informal discussion, an adjournment was taken for one week.

So, just forty years ago to-night, the first regular meeting of the Association was held, the constitution adopted, and an order of business established. It is interesting to note, as indicative of the spirit and earnestness of those men that no time was lost in beginning the legitimate work, for as soon as the business affairs were settled, they immediately listened to a paper on "Dysentery, its Etiology, Pathology and Treatment," given by Dr. Morris. Those of us who were members twenty years ago, can well believe that the secretary did not exaggerate when he stated in his report, that the Doctor's discussion was "thorough and most interesting," for we well can remember the refined culture and scholarly attainment manifested in all his efforts before the society. At this meeting Dr. B. F. Sherman was elected President; Z. B. Bridges, Vice-President; J. R. Furness, Secretary, and Robert Morris, Treasurer, and it is evident that no political "ring" controlled in those days, for the voting was close, making several ballots necessary in one or two instances.

For nine years the stated meetings were held every month, but on September 3, 1874, a change was suggested and the first and third Tuesdays of each month were selected and have so remained till the present time.

During the early years of existence the personnel of the Association changed slowly, though new men were introduced as time went on. Dr. E. H. Bridges joined on March 6, 1866, upon his return from the army, and from the first assumed that aggressive interest in its work so familiar to us who still lament his death. Forceful in argument, resourceful and positive in debate, enthusiastic in his beliefs and prejudices, and yet, withal, kind and considerate to the younger members, his

presence was always an inspiration and his absence ever will be deplored.

Drs. Furness, Morris, Bridges and Sherman seemed to be the active factors in maintaining the standard of efficiency and to the last, undoubtedly, the greatest praise is due. The enthusiasm so conspicuous in the later years of Dr. Sherman's life was manifested in these days, and so far as can be ascertained, not a single meeting of this little circle did he miss, unless absent at the State Society, which he invariably attended, and of which he was made Vice-President in 1872 and President in 1884. He was our first President and during the last ten years of his life the office was made permanent with him; an action which he considered one of the honors of his life. His interest in the society from the first was intense and never waned as the years passed. To his unswerving loyalty, rugged honesty, intense interest in the advancement of his profession can be attributed a large share of the credit for our present prosperity, and we as his successors will do well if we emulate the qualities so conspicuous in his whole professional career.

It was the original intention to have the legal profession affiliated with this organization and one or two lawyers did attend a few meetings; but no great interest was manifested and they were soon conspicuous only for their absence. Messrs. McCurdy and Soper accepted membership and were assigned essays, but they failed to materialize and their names were gently and quietly dropped.

The only member of the first decade now living who is with us to-night is Dr. Bartholomew, and the first reference to him noted is at the meeting of August 3, 1870, when he read a "very interesting and instructive essay upon Anaemia," and I am sure it is not inappropriate to say that the Doctor's efforts always seemed to meet the approval of the society in those days, as they do at the present.

It was, for many years, customary to impose a fine of fifty cents upon all members absent from regular meetings without sufficient and acceptable excuse and this rule was maintained with such rigor that it kept the treasury in quite a flourishing condition, and was a subject for much argument and no little opposition from delinquent and not over-opulent members. Dr. A. P. Grinnell, now of New York, who was secretary in 1870, mentions in his minutes several spirited controversies, and

one in particular, of which he says, "Most of the members were absent studiously attending a chaste performance of a circus, and it was deemed advisable by those interested that the delinquents be excused; but through the strenuous efforts of the minority, each and every culprit discovered the necessity of replenishing the treasury and complying with the constitution."

A pleasant and valuable feature of the meetings has always been the social part; when relaxation comes after labor; when we gather round the table of our host to enjoy his hospitality, forgetting the great and petty anxieties of our work and indulging and enhancing the good fellowship which predominates amongst friends and associates on such occasions. Physicians see so much of the serious and suffering phases of life that occasions such as these serve to build up and rejuvenate the tired nerves, dissipate the fogs of worry and so tone up mentally, morally and physically. The only criticism passed upon this custom is the tendency ever manifested toward extravagance in entertainment, and this same objection was made in the early years of existence. Secretary Grinnell refers repeatedly in his minutes to the pleasures of delectable suppers served at these meetings, and I quote him verbatim from his report of October 8, 1870, when he says, "At a regular meeting of the society, when but few members were present, a resolution was passed dispensing with supper as a part of the proceedings of this body. Heretofore the repast has constituted one of the prominent features of the meetings and a few members, unaccustomed to an Epicurean meal, had placed great dependence upon this as a means of becoming at intervals thoroughly filled; with these all gilded hopes of future sustenance were vanished upon the reappearance of cold meats, buns and cold water. However, the great change in the bill of fare was relished and the society may now justly consider the feasibility of offering air and sawdust as sufficient food for hungry doctors."

During the early days, while the meetings were necessarily smaller, it is evident that the discussions were not inferior to those of the present day. Essays covering all subjects in the domain of medicine came, as to-day, in well-regulated routine and variety, and their character certainly was not inferior to those presented at the present time; and it is evident that the discussions were full, free and at times forcibly emphasized with personalities.

The society suffered its first loss in the death of Dr. J. R. Furness, who in his day was one of our best physicians and who promised to attain an enviable position in his medical career. At the meeting held February 8, 1873, he spoke on the subject of Acute Mania, and at the next meeting, resolutions were passed, deploring his demise and extolling his qualities as a man and a physician. Since then it has been our sad duty to record the passing away of several of our members, who have gone to the "Great Beyond" after years of work as well as pleasant association.

And so the society went on pursuing the even tenor of its way and evincing at the end of the first decade a healthy growth in interest and quality of work, and presenting a membership composed of B. F. and F. B. Sherman, Z. B. and E. H. Bridges, Robert Morris, F. S. Geare, and C. C. Bartholomew; also medical students, J. C. Sherman, W. J. Herriman, J. S. Howard, and W. O. Bridges. The last named gentlemen took an active part in the proceedings and undoubtedly assisted in keeping up a healthy interest in the subjects they discussed.

Time will not permit a detailed description of the society's work during the succeeding years but we all know that while the following decades may have been uneventful, it was not a condition of desuetude. Desirable additions were made to its membership from time to time, while the nucleus of veterans, Bridges, Sherman, Morris, and Bartholomew, maintained its original spirit.

One of the greatest benefits that Ogdensburg ever received came in 1890 when the St. Lawrence State Hospital for Insane was established here. An impetus was given to our society at that time by the introduction to its membership of the staff of physicians from that institution, which has never diminished in its influence. This new blood injected into its body, stimulated its vitality to a remarkable degree. Such men as Wise, Mabon, Mosher, Hutchings, Babcock, Cook, Somers, Leake, Burdick, Ryon, Kidder, Wilgus, Nevin and others, with their mental acumen and scientific training, were an addition to our ranks whose value is beyond computation. Ever enthusiastic in their work and generous in the use of the vast clinical advantages of the institution, these men have been and still are a benefit to our society which we can never over-estimate.

It was indeed a fortunate episode, the coming of this magnifi-

cent institution, and every year our appreciation grows. None of us can forget the delightful meetings held at the hospital, nor, in the early days, the exciting trips taken to and fro. Long before the days of the trolley, we were compelled to hire a wagon and to drive down over the rough roads and through the dark woods, relying upon the intelligence of the driver and the sagacity of the horses for our safety; but it was great fun and very few shirked the hardships of the trip after once enjoying the generous hospitality upon arriving.

It is unnecessary to refer to the present membership of our Association, even if time were available, but I cannot refrain from urging upon us the importance of still greater efforts for advancing the interests and building up the character of our work in the future.

It is doubtful if we, as individuals, recognize the power and influence our association might wield in a community like ours were we to exert ourselves as a body in proper directions; and it is a question if we are not derelict in our duties, that we do not take more active part in those municipal affairs which pertain especially to health and sanitation. We have assumed, heretofore, practically no responsibilities as a society, and while conservative dignity always is advisable and commendable, it should not mean absolute silence.

The work of the health board, as regards the various questions of sanitary nature, should receive due consideration; and the approaching problems of a proper municipal water supply should not be neglected. Certainly the present conditions are a menace to the health of the community, and to state it mildly, are far from creditable to a city which assumes to be enlightened and progressive. This is not the time or place to present the arguments showing the fallacy of the reasons for postponing the proper measures for relief, but the time will come, I fear, when an epidemic will occur of such dimensions as to open the eyes of the people to the error of economy in this direction and to demonstrate that we have been negligent in our duties as guides to the people in matters pertaining to health.

II. PERSONAL REMINISCENCES.

By C. C. BARTHOLOMEW, M. D.,

Ogdensburg, N. Y.

Mr. President and Gentlemen:

Being the oldest resident member I was naturally called upon by our worthy president to recall some reminiscences of the early days of this society and to offer them for your entertainment to-night. Having a painful sense of unfitness for such work I was induced to consent only when told that my name was already on the programme and that I had full permission to ramble as much and as widely as I pleased. You all know what a thorough and efficient worker our president is. You know that like all such workers he keeps in view the main ends to be accomplished and is not diverted from his purpose by trifling details. This will serve to explain the fact that he omitted to tell me that the programmes were not yet printed. Having accepted the task, however, I soon decided what course to take, and although my decision makes it necessary for me to talk a good deal about myself, I comfort myself with the reflection that the responsibility may rest on him who placed me here. I decided in short to speak most of that which I best remember.

My, first, fondest and most lasting memories of those bygone days are associated with the late Dr. John R. Furness. Dr. Furness was of about my age, our circumstances, habits and tastes were somewhat similar and our offices were next door to each other. We were friends from the first and our friendship grew and was strengthened by the kindnesses and services which the current of events enabled us to render each other. The loss which I felt at the death of Dr. Furness has never been fully repaired.

At the second meeting which I attended after joining the society, only three members were present. Coincidentally a circus gave an exhibition in Ogdensburg on that same evening. A few days afterward I happened to meet the late Dr. Elisha H. Bridges, who, in the course of the conversation, excused himself for absence from the meeting. I do not exactly recall what his excuse was, but my impression is that he said that Dr. Furness had called him in consultation over a difficult case. Being a young man just off the farm and not much acquainted with Dr. Bridges,

there seemed to me nothing strange in this statement. Later in the conversation I said to the doctor that if I had not had a subject to discuss by appointment, having just joined the society, I would have liked very much to have attended the circus myself. At this point Dr. Bridges laughed somewhat boisterously. I saw no occasion for his laughter and was somewhat disconcerted, but at the next meeting when the several delinquents were called upon for an excuse or fine, I learned why he laughed.

Any one who recalls the early days of this society must necessarily think of the late B. F. Sherman. A good fellow, a cheerful friend, an enthusiastic and devoted promoter and supporter of medical societies; Peace be to his ashes! His truly great energy, his self esteem, his love of controversy and his peculiar manner made him somewhat dreaded as an adversary in debate, especially by the younger and more timid members. However, he was not always invincible. Some of you have heard the story illustrating this point, but I claim the privilege of an old man and tell it again. On the evening of a regular meeting of this society there was a wedding at the Episcopal church in Ogdensburg. In company with others I attended this wedding. For some reason there was a delay in the arrival of the bridal party and, as it was to be a fashionable wedding, it might be said of the crowd in the church that expectation was on tip-toe. Those of you who knew the late Charles Lyon will remember that he was a large man, having a rather bushy head of white hair and that he was a very busy man and had a bustling manner. Just when the excitement was at its height Mr. Lyon arrived at the church and entered in his usual characteristic manner. As he did so the word went round "Here they come!" "The bridal party!" In their eagerness to see, many of the audience stood up on the seats. When they discovered their mistake the amusement, not to say hilarity, which followed can best be appreciated by those who understand something of the psychology of a crowd. At the meeting of this society that night it happened that Dr. Sherman discussed the etiology and pathology of tuberculosis. He took his authority from what he supposed was the latest; my impression is that he quoted Niemeyer. My blood being up, owing to the excitement of the wedding, I ventured to oppose, and on the authority of Villemin, as quoted by Flint, I held that the disease was communicable by inoculation. To my surprise my opponent was worsted. What was still more surprising his manner showed

that he was not only beaten, but discomfited as well. For a long time afterward I was made to do penance as occasion arose, while at the same time the aforesaid young and timid members regarded me as nothing less than a genuine hero and turned to me as their champion from that day.

I recall very distinctly the disagreeable feeling that was caused in me by that article of the constitution mentioned by our worthy president in his excellent paper. The imposition of a fine for non-attendance at our meetings seemed to me an interference with personal liberty, a temptation to prevarication, not to say fabrication, and as was afterward proved, entirely unnecessary as a means of inducing attendance or replenishing the treasury. At a later date I had the satisfaction of making the motion which led to his clause being stricken out of the constitution.

Fellows of the Association: You will hear from abler speakers than myself of the progress of medical science in its different departments, but without encroaching on the ground which they will occupy, let me say that these improvements would be of little avail if the world outside the profession did not also make progress to a somewhat corresponding degree. My recollections of the early days of this society compared with what I see and know of the present give me ample evidence that the world is growing wiser and better, or in other words that civilization is progressing. I read it in the press, I hear it from the pulpit (doctors do sometimes attend church), I find it in my intercourse with my patients and friends, I see it in the material conditions in Ogdensburg and elsewhere. Sanitary conditions are greatly improved, the attitude of the public toward our profession is more satisfactory.

The late John W. Draper, in one of the editions of his great work, "A History of the Intellectual Development of Europe," made the statement that the civilization of a country may be measured by the extent to which music is cultivated and appreciated in that country. Although this statement may not be entirely unquestioned, it is undoubtedly true to a large extent and measured by this standard the city of Ogdensburg has made great strides in the past thirty-five years. When I first came to this place there existed an organization called the "Oswegatchie Band." If it were possible, Mr. President, for this band to appear on our streets to-day and play as it did in those days I am sure our police would feel at liberty to suppress it without process

of law, or otherwise an outraged public would take summary means of ridding themselves of such a nuisance. This band had for a long time a favorite piece which they played on all occasions and which if written for the express purpose of displaying the imperfection of the instruments and the weakness of certain of the players would have been voted a signal success.

We hear not infrequently unfavorable criticism on the medical profession of to-day in Ogdensburg and elsewhere as compared with that of a generation ago. Let us admit that these criticisms are not entirely without foundation, but if the individual members have lost in strength and independence and that positive manner which was so well calculated to inspire confidence, the profession as a whole has gained vastly more in its superior education and training, its greater harmony of thought and action, and in the greatness of the results which it is consequently able to produce.

As I look backward over the years of my connection with this society a host of memories throng upon my mind, tinged with sadness, it is true, but nevertheless freighted full of cheer and satisfaction for the present and high, bright hope for the future for us all.

III. THE DEVELOPMENT OF THE STATE CARE OF THE INSANE.

By WILLIAM MABON, M. D.,

President of the New York State Commission in Lunacy, Albany, N. Y.

Not among the least of the achievements of the nineteenth century in our country, which may properly be credited to the medical profession, was the establishment before the close of the century of the admirable system of state care and state supervision of the dependent insane in New York, begun in the first decade by the setting apart of wards of the New York Hospital in New York City for the special care and treatment of cases of insanity, advanced in 1843 by the opening of the Utica Asylum, elaborated on special lines in the organization of the Willard Asylum for the chronic insane in 1869, and finally realized in the last decade.

A glance may be taken at the conditions existing during the early part of the century, so far as provision for the dependent insane in our state had been made.

The first evidence of the awakening of the state to the necessity of making provision for its dependent insane was noted in 1806, when the legislature granted an appropriation of \$12,500 to provide for the insane who might be received at the New York Hospital in special wards assigned to them. This appropriation, granted for many years, made possible the establishment of the Bloomingdale Asylum, which is at the present time continued as a part of the New York Hospital.

The census of 1825 showed 819 cases of recognized insanity in the State, of whom 263 were being maintained in the wards of the New York Hospital, the balance, 556, being confined in jails, poor-houses and private families. In a legislative report of 1830 it was shown that the average annual number treated in the Bloomingdale Asylum was about 140, which would indicate that a still larger number than that above mentioned were receiving no proper treatment. In this same report the complaint is made that the authorities of the Bloomingdale Asylum failed to meet the requirements of the legislature in the matter of filing reports as to the treatment received by patients. It was further shown that the physician in charge of this institution resided seven miles distant from his patients and visited them but once a week. This report dealt emphatically upon the need of additional and appropriate provision for the large number of insane, many of whom, it was stated, were roaming around the country, terrorizing the community, and receiving no medical care or attention of any kind. A definite recommendation for the construction of a new institution was submitted. Reference was also made to the frightful disclosures of the British Parliamentary Committee of 1815, which investigated the matter of asylum abuses, and the hope was expressed that there would not be a repetition of these scandals in this state.

Although this report was supplemented by others in the years 1831, 1832, 1834 and 1835, no definite action was taken until 1836, when the first appropriation of \$60,000 was made to provide for the purchase of a site and the beginning of the construction of the State Lunatic Asylum, afterwards the State Hospital at Utica. This, the parent institution, was opened in 1843, following an enlightenment of public sentiment largely to be credited to the medical profession. As the population of the state increased it became apparent that this institution could not properly fulfill the functions originally designed for it, unless

further provision was made for patients committed thereto, but who were not regarded as appropriate for its wards. Accordingly, in the year 1846, the State Medical Society memorialized the legislature upon the subject of the care of the mentally afflicted, generally with special reference to the care of idiots, with the result that the legislature shortly afterwards authorized the establishment of the present institution at Syracuse, designed for the care of this particular class.

Let us take a glance at some of the methods employed in the first half of the century, and the results claimed by the authorities in the line of recoveries, etc.

In the twenty-year period, 1821-1841, it was claimed by the Bloomingdale Asylum authorities that fifty per cent. of male patients and thirty-eight per cent. of all female patients admitted, had been discharged recovered. Even granting that with the selected cases, which the institution was able to treat in these early days, i. e., they were not obliged to work upon a huge proportion of defective aliens, which now comprise so large a part of the State Hospital population, this statement must be taken with a grain of salt, otherwise the results of treatment mentioned in later official reports must indeed seem poor. But the optimism which prevailed in the earlier part of the century as to the complete cure of this large proportion of cases was shattered by the accurate statistical studies submitted by that eminent alienist, Pliny Earl, of Massachusetts, who, after an exhaustive examination of this subject, both in Europe and in this country, declared emphatically that claims of this nature could not be substantiated.

The early reports of the hospitals show the baneful results following the wide-spread practice of that time in blood-letting as applied to the insane prior to their admission to institutions (it nowhere appears that this practice was followed in any of the hospitals after their reception), patients being often brought to the hospitals depleted physically by reason of this treatment, resulting either in aggravated symptoms or in greatly retarded convalescence.

In 1854 the insane population of the State was estimated to be 3,000, of whom 1,400 were unprovided for, the balance being cared for in the Utica Asylum, the Bloomingdale Asylum and the county institutions of New York, Kings and Albany counties. During that year seventy-five patients were refused admission to the Utica institution by reason of lack of room at this Asylum. To

add to the difficulties of administration fifteen per cent. of the cases admitted were criminals, and one hospital report contains the statement that two patients, who had committed homicide, had escaped from the institution and were roaming around the country, and that people in the neighborhood were much terrified.

In 1855 the county authorities memorialized the legislature to make special appropriation for the chronic insane. Dr. Willard submitted data respecting the number of insane unprovided for, and showed that hundreds were confined in poorhouses or in jails, chained to walls and shamefully neglected. In response to his efforts and those of his assistants in the State Medical Society, the doors of the Willard Asylum, an institution originally designed to care for cases discharged as incurable from the Utica Asylum were opened. This was followed by the establishment in rapid succession of the Hudson River State Hospital at Poughkeepsie, the Buffalo Asylum, the Binghamton Asylum, the model hospital here in Ogdensburg and the Rochester Institution.

In 1870 there were 4,484 insane in public institutions. Of these 925 were in State asylums, and 148 in incorporated institutions receiving State aid; in the institutions of the Counties of New York and Kings there were 1,967, and in the county poor house, and city and county asylums outside these institutions, there were 1,444.

In 1873 the insane population had grown to such an extent that the legislature provided for the appointment of an officer by the State Board of Charities to be known as the State Commissioner in Lunacy. The following year this officer was made independent of the State Board, and from that time to 1889 submitted special reports direct to the legislature respecting the insane.

We now approach that era in hospital administration for which so much in the way of material progress, both in the enhanced comfort of the insane, advanced methods of treatment and the provision for economical administration, can be claimed. In the late '80's the State Charities Aid Association, in conjunction with the State Medical Society, began its apparently hopeless task of placing every dependent insane person, not cared for in families, under the protecting aegis of the State. The opposition of interested counties maintaining local institutions for the insane was sufficient to defeat measures, supported by these bodies,

during the years 1887 and 1888, but in 1889, with the assistance of the newly created State Commission in Lunacy, the long desired for reform was brought to a successful issue.

In the first annual report of the State Commission in Lunacy, after its visit to the County Poor Houses and Insane Asylums, we find the following: "The Commission would be remiss in its duty if it failed to note, in justice to the public, to the insane, and to itself, some of the striking illustrations of evils inherent in the system of county care, which were observed during its visitation of the exempted County Alms Houses, but at the same time, while some of the things which are about to be mentioned are almost too shocking to warrant belief, names and places have been omitted, lest any sense of personal injustice be felt, since many of the keepers and other employees of these institutions are worthy, hard working and fair minded people, who appear to be conscientious and zealous in the performance of duty."

"On the women's ward of an institution the scene presented was that of a veritable bedlam. In this ward were found indiscriminately huddled together, paupers, children, vagrants and insane, all in a state of extreme disorder. One motherly looking woman was discovered going about the place barefooted with apparently nothing on but a skirt and a cotton underwaist; the latter so much disordered as to permit of the exposure of her person." "In another instance, when the question of bathing was under discussion, and when it was found that four or five patients were bathed in the same water, the explanation was made that the patients 'with skin disease are bathed last.'"

In one of the institutions visited by the Commission it was found that a man had the care of women patients; in another there was a ward without any night supervision where one woman and six excitable, untidy men slept. In still another the physician was compelled to act as an attendant, while in several the soiled bedding of patients was allowed to remain without being changed; in fact, these instances of neglect and inefficiency, as well as abuse, could be multiplied almost indefinitely.

With the passage of the State Care Act there devolved upon the Commission the mighty task of developing order out of chaos, i. e., of bringing to a coherent and easily manageable system the loose ends of the city and county administration, to make the insane, in fact, what they had always been in terms—the wards of the State.

With the one half million dollars provided by the Legislature, additions to existing institutions were made at once, to accommodate 2,200 patients remaining outside of State care in the counties not included in the metropolitan district. This work was brought to a close in 1893, and those unfortunates were then comfortably housed in one or another of the great State hospitals. There remained then in local care only the insane of New York and Kings counties. Both of these counties soon tired of the anomalous condition in which they had placed themselves in paying nearly one-half the State tax for maintaining the insane outside of their district, and also paying the full cost of local maintenance. Accordingly, upon presenting a certain part of their hospital property to the State and leasing the large buildings on Ward's Island for a fifteen-year period at a nominal rental, they were received into State care system, 1895-1896.

Of the great problems grappled by the pioneers of psychiatry in this State in the early days, at least a passing mention is due. This included types and constructions of buildings, whether on the colony or the so-called corridor or congregate plan, their location with reference to cities or suburban communities, adequate water supply, proximity to lines of railway travel, the proper classification of patients, the occupation of patients, the question whether chronic patients of any classification be permitted to mingle with acute cases, and procuring of legislative appropriations for the proper equipment and extension of buildings, also to provide adequate salaries of medical officers (assistant physicians received \$1.30 per day, even up to the middle of the century), the question of restraint or non-restraint and diversion, all of these and others of equal importance were studied with the greatest care, and were in the main wisely solved by the Grays, Chapins and Andrews of the past century.

At the present time we have in our State hospitals nearly 26,000 insane persons, comprising every patient in need of State Hospital care not being maintained in their families. The proportion of the registered insane to the population in this State is estimated to be one in 302, and it is believed that there are not less than 6,000 persons cared for by relatives or friends who are not so registered.

The total valuation of the State Hospital buildings and equipments is approximately \$25,000,000, and to give you some idea

of the burden imposed upon the State in caring for this class, I may say that during the past ten years, we have spent, for maintenance and for the extension of buildings to provide for the addition to the hospital population, something over \$50,000,000.

The establishment in 1895, through the efforts of my distinguished predecessor, Dr. Carlos F. MacDonald, and the Commission, of the Pathological Institute in the city of New York, marks an extension of the work of prime interest to physicians.

Although some years passed before this department could be brought to a coherent and efficient working basis, the Commission can now report that under the scientific direction of one of the leading psychiatrists of the world, Dr. Adolf Meyer, the institution has entered upon a career of great usefulness, and while definite and complete data as to the causation and prevention of insanity may remain a closed book for some time to come, the medical profession may agree with the Commission that it, at least, is moving along the most advanced lines.

Before concluding, I will hastily sketch a few of the more important improvements which have been carried forward under the direction of the Commission during the sixteen years of its official existence.

1st. We have the registration of every physician in the State qualified to execute medical certificates in lunacy.

2nd. We have registration of every committed insane person since 1889, together with a copy of the commitment papers upon which he was admitted to a State or private institution.

3rd. We have a training school attached to each State Hospital, whose diplomas entitle recipients to add R. N. after their names.

4th. By attendance upon a course of instruction established at the Pathological Institute, our hospital physicians receive constant incentives to higher medical achievements.

5th. The names of the State institutions have been changed from asylums to hospitals.

6th. Emergency commitments are in force, permitting admissions to hospitals upon the presentation of the medical certificate, five days being granted within which judicial approval may be obtained.

7th. The medical records of the institutions have been made uniform and are of far greater relative value than ever before.

8th. Larger sums are allowed each year for the diversion of patients and an infinite variety of occupations are provided for them.

9th. Special buildings and equipments have been provided—a most important matter—for the acute classes in many of the hospitals, and every requisite in the way of hydrotherapeutics and electro-therapeutics has been added as fast as funds have been allowed by the Legislature. It is the ardent hope of the Commission that the day is not far distant when all the State hospitals shall be so equipped and brought up to the modern day requirements.

10th. At each hospital, meetings of the medical staff are held at stated intervals where reports on cases recently admitted are presented for discussion, and matters of medical interest are considered.

11th. An appropriation has been made for the construction of a Psychopathic Hospital in New York city, where recent and curable cases can be taken at once from their homes to be under the trained observation of prominent alienists, neurologists and, when needed, other specialists.

12th. And I presume of the least interest to the medical gathering—the cost of maintaining each insane person, has, without detriment to the institutions, dropped from \$216.00 per annum, the rate prevailing in 1893, to \$178.62, the rate which prevailed in 1904. This has been brought about by a careful study of conditions, and by the intelligent assistance of the superintendents of the various hospitals.

In closing, may I be permitted to express my deep sense of obligation to the Superintendents and Medical Officers of the State Hospitals for their active support, earnest co-operation and fruitful suggestions in the complex problems involved in the scientific work of the care of the insane.

IV. PROGRESS IN GENERAL MEDICINE.

By WILLIAM B. HANBIDGE, M. D.,

Ogdensburg, N. Y.

Mr. President, Fellow Members and Guests:

When our president, clothed with regal authority, commanded me to read a paper on the progress of general medicine during the last forty years, I, of course, felt highly honored. I was,

however, painfully conscious of my inability to do the subject justice, and felt that some other member could have done it much better than I.

When I thought of the inspiring address that would have been delivered, had they been alive, by some of the eminent men who have so often graced this society with their presence and charmed it by their eloquence, my courage almost failed me. I realized that, for to-night, I was appointed to wear their mantle, and I was conscious of the fact, that it would be an ill-fitting garment. What a delightful evening to remember if we could listen to a Sherman, a Bridges, Brownlow or Morris, when under the spell of such a glorious theme.

In considering this subject, the first thing that confronted me was some means of deciding, what is progress? I think we will all agree, that a nearer approach to truth, in any department of medicine, is progress. A certain school of ancient Greek philosophers maintained that there was no criterion of truth, consequently, we could not tell when we arrived at truth; if this be the case, what one would call progress might be asserted by another to be retrograde metamorphosis. I, however, will take it for granted that, upon this occasion, our president willed that the speaker should be the criterion of truth and will proceed accordingly.

There has been a development in the science and art of medicine since the organization of this Association; the outcome of the establishment of laboratories for research, that has been so new, so startling and fraught with such marvellous results to humanity, that it has been called the "new medicine." The new medicine was conceived long before the latter half of the nineteenth century; the germ theory of disease, and Jenner's discovery of vaccination, were prophetic of what was to come. The country of its nativity was France, and the immortal Louis Pasteur ushered in its being. For some years it was a weakling, but it was so carefully guarded and nurtured, not only by the great master, but by such able followers as Von Behring, Roux, Kitasato, Koch, Haffkine, Yersin, Klebs, Loeffler, Metchnikoff and others, that to-day it is revelling in the exuberance of a vigorous adolescence.

What did Pasteur do? In the sixth decade of the last century he taught us that fermentation and putrefaction were caused by the growth of microscopic organisms. He found bacteria in

myriads in earth, air and water. He observed that certain chemical substances, and heat arrested their growth. These discoveries, through the genius of Joseph Lister, lead to the development of that branch of modern medicine, aseptic surgery, of which we are all so justly proud. We are told that for twenty years, Pasteur labored on and on, gaining knowledge of the bacterial world, before he attempted to apply the information thus obtained to the prevention or cure of disease. He established the fact that germs do not spring up *de novo*, and thus laid to rest forever, the theory of the origin of disease by spontaneous generation.

He believed that nature, in the cow-pox, had given us an attenuated virus, which prevented small-pox, and his intuitive genius lead him to try, by laboratory methods, to weaken the virulence of pathogenic germs, so that they would be harmless, and yet confer immunity. In this he was eminently successful with the germs of chicken cholera, hog cholera, anthrax, and hydrophobia, and he applied this discovery to the prevention of these diseases.

He not only laid the foundation of prophylaxis, by vaccination with attenuated virus, but he wrested from nature the secret of serum therapy. He surmised that there was some substance in the blood of animals, rendered immune, that would have a curative effect, when applied to others.

The first public test of an attenuated virus was so dramatic and convincing, that I cannot refrain from quoting a description by MacFarlane: "Pasteur and his disciples forthwith went to work to attenuate the bacilli of anthrax. It was a task which called for twenty months of experimenting: but no experimenting could have had a more telling climax. The Academy of Medicine mocked at the new remedy, but the Agricultural Society of Meulin had some homely faith in it. They put sixty sheep and ten cattle at Pasteur's disposal, and invited him out to the farm of Pouilly-le-Fort to make a test for all men to see. Twenty-five sheep were to be vaccinated by the attenuated virus, several days were to be allowed to pass, and then those twenty-five, together with twenty-five more, were to be inoculated with the most virulent cultures of anthrax obtainable. Ten sheep were not to be touched at all, but set aside merely as observation animals, of the ten cattle too, six were to be vaccinated, and the other four left untreated; all alike were to receive the deadly

anthrax inoculation. That was in May, 1881. The preventive vaccinations took place about the middle of the month, the inoculations on the thirty-first; and there looked on not merely numbers of surrounding farmers, but crowds of Parisian savants, academicians, journalists and men of affairs. Those who jeered at Pasteur were there in force. On the second of June the crowd gathered again to see what results had been obtained. They were impressive enough. All those sheep and cows which had been vaccinated were browsing in the most perfect health. Twenty-two of the sheep not vaccinated were already dead, and the other three were in a dying state. As for the four cows not vaccinated, they no longer had strength enough to eat. It was a cruel test, but it was as convincing as that of Elijah and the prophets of Baal. The experiment of Pouilly-le-Fort marks the definite beginning of the modern era in medicine."

But while Pasteur was laboring day and night, the brilliant school that he had established was not idle. Discoveries of great value were being made in nearly every civilized country. Pollander discovered the bacillus anthracis, and Devane demonstrated its infectious nature. Thus the germ theory of disease was a theory no longer, it was a reality. The bacillus leprae was discovered by Hanser in 1879. Bacillus tuberculosis by Koch in 1880, bacillus typhosus by Eberth in the same year; bacillus diphtheriae by Klebs and Loeffler in 1883, the germ of cholera in 1884 and about the same time the bacillus tetani by Nicolani. In 1886 Frankel proved pneumococci to be the cause of pneumonia. In 1880 Laveran, a French army surgeon, discovered the parasite of malaria in the red-blood corpuscles; and later Ross, a British army surgeon in India, carried on investigations that led to experiments, which convinced the medical world that a mosquito called Anopheles, is the only disseminator of malarial fever. The miasmatic theory consequently, quietly "entered into rest."

To United States army surgeons, belongs the credit of proving, during the American occupation of Cuba, that the poison of yellow fever is conveyed from the sick to the well, by the deadly stegomya. Dr. Findlay, of Havana, had long claimed that a species of mosquito was the means by which this fever spread, but his views met with derision. Doctors Reed, Carrol and Lazear, by a series of brilliant experiments, proved the truth of Findlay's theory; but Lazear succumbed to the disease, and

his name must be added to the list of martyrs in the cause of science.

Another discovery of great importance, was that of phagocytosis. In 1882 Metchnikoff demonstrated that the leucocytes have the ability to attack and destroy pathogenic bacteria and prevent the system from invasion. These discoveries are all of great scientific interest, but what is more important, they are of great practical value, as they have laid the foundations of modern preventive medicine. Who can estimate the thousands of lives that are saved annually by the knowledge that tuberculosis is generally conveyed by dried sputum, and is usually inhaled; that cholera, like typhoid fever, nearly always spreads by means of contaminated water; that the rat, and flea, as a rule, are responsible for bubonic plague epidemics; and that the mosquito is dangerous, when infected by the malarial parasite or germ of yellow fever. The day has gone by when any civilized nation should quake at the invasion of cholera or the black death. In the middle ages, during one terrible epidemic, one-fourth of the population of Europe was carried off by this awful malady. To-day such a thing should be impossible.

Modern medicine has been accused of helping to deteriorate the human race, by preserving the weaklings, and thus arresting the law of the survival of the fittest; but surely preventive medicine is enabling the nations that are intellectually fit, to survive, while those steeped in ignorance, are decimated by preventable diseases. The application of sanitary methods has driven typhus fever into remote recesses and has enabled Havana, where yellow fever was a scourge for two hundred years, to establish a quarantine against New Orleans.

If the science of bacteriology had led to no other discovery than the serum treatments of diphtheria, it would be entitled to our deepest gratitude. Those of us who combated this disease by old methods, can well remember the feeling of horror that crept over us when we visited our little patient, and noticed a husky voice, and croupy cough. We well knew that ere long the little sufferer would die a horrible death unless euthanasia was produced by surgical means. To-day how different! With what hope and faith we inject the Divinely given serum; and when used early, and in sufficient quantity, our hopes are not in vain.

There have been also other triumphs. Yersin and Kitasato have independently of each other, elaborated a serum that is

decidedly curative in cases of bubonic plague, and Haffkine has produced a vaccine that gives immunity in the majority of cases. He has also given us an attenuated virus that renders cholera infection innocuous.

Along other lines medicine has progressed slowly, but surely. In 1857 Virchow published his wonderful work on cellular pathology, but its effect on medical thought has been felt chiefly during the last forty years.

In the diagnosis of diseases, laboratory methods have proved of great value. The new science of hæmatology enables us to differentiate the various forms of anæmia and Widal's reaction may be considered pathognomonic of typhoid fever.

By an examination of the blood, malarial fever may be diagnosed positively and the existence of typho-malarial fever has been proven. The microscope, the laryngoscope, the ophthalmoscope and chemical analysis of the stomach contents are of great value, in certain cases, in arriving at a positive diagnosis.

Only a few drugs of much value have been brought into use, although there has been great improvement in the palatableness of medicines. Pharmacology has certainly kept pace with other branches of the healing art. A few of the new remedies of value are thyroid extract, preparations of the suprarenal gland, cocaine, urotropine, also phenacetin and allied products. This is a strange statement to make, when the mail carrier brings us daily marvellous tales of curative action of some new drug, or combination of drugs. These preparations approach us in a confidential manner. They sometimes claim kinship. They call themselves anti's, and in the language of printers' ink boast of their prowess in exterminating disease. We must beware of printers' ink, when it is used as a magnet to attract gold. The popular writer on therapeutics is too often a prevaricator and writer of fiction; and the more vociferously he asserts his dreams, the more are we inclined to give ear to him. Our grandfathers laboriously got their knowledge of therapeutics from the authorities who wrote heavy books; to-day how different! We recline in an easy chair and listen to the sweet voice and fluent speech of the gentlemanly distributer of samples.

The criterion of truth for to-night, however, asserts that we have made great progress in the treatment of the sick. We do not assault the disease so vigorously, except when we have specifics. We put the patient in the most favorable environment

to resist and fight disease. We would rather have our sin one of omission than commission. We have great faith in *vis medicatrix naturae*, when properly assisted. The trained nurse is the physician's indispensable companion in properly carrying out this line of treatment. We must remember, however, that our fathers recognized the importance of good nursing, and often, and often they stayed by their patients for hours, during critical periods. Hydrotherapy, particularly in fevers, has been one of the great advances in treatment. The statement that the death rate in typhoid fever has been reduced fifty per cent. by the judicious use of cold applications, is not inaccurate. The method had been in use before 1865, but it had not become an established practice.

In the management of the tubercular great strides have been made by the profession generally. We have become convinced that the open window is, to the consumptive, what the open door in the East is to trade-life. Those in the van of medical progress recognized this forty years ago, and that we may have proper respect for those who have gone before us, I will quote a passage on the treatment of phthisis, written in 1866 by one of the greatest clinicians of any age, one who always led the way in medical thought, the late Austin Flint. He taught that consumption was frequently a self-limited disease, and he thus gave us hope, which we know is often fulfilled. After dwelling on the great importance of proper nourishment, he says: "Exercise in the open air, or, as I would prefer to say, out-door life, is, of all measures, the most important. In a paper already alluded to, on the management of pulmonary tuberculosis, I have analyzed the recorded histories of sixty-two cases in which an arrest took place, with a view to the points in the treatment which were common to all or a greater or less number. In twenty of these cases the arrest took place under hygienic measures without medicinal treatment. In these cases the most important point of agreement related to change of habits as regards exercise and out-door life. In respect to this point, there was also an agreement in the cases in which medicinal measures were employed. The following extract from the paper contains a summary of the facts, with the general conclusions: "The most striking and valuable of the results of the analytical study of these cases is their almost uniform agreement as regards change of habits with respect to exercise and out-door life at the time of

the arrest. Excluding the seven cases in which the arrest was attributable solely to an intrinsic tendency, and two cases in which the facts with respect to this point were not noted, of the remaining fifty-three cases, in all, save three, the histories show a greater or less change of habits to have been made; and in many cases the change consisted in relinquishing sedentary callings for other pursuits, in order to carry out more effectually the desired reformation. I am well satisfied that here is the foundation for the successful management of pulmonary tuberculosis. I would rank exercise and out-door life far above any known remedies for the cure of the disease. There are grounds for believing that the advantage of a change of climate mainly consists in its being subsidiary to the change of habits as regards exercise and out-door life. So deeply impressed am I with the correctness of this view of the regimenal management of the disease, that I cannot express myself too emphatically in trying to enforce its practical importance."

"Dr. James Blake, of San Francisco, California, has reported several cases in which most favorable results followed living in the open air during the summer months, at an elevation of from three to five thousand feet above the sea, in the coast range of the mountains of California where the temperature is very equable, and no rain falls for five or six months. The patients did not even sleep in tents, but were in the open air during night and day."

"Exercise in the open air should be accompanied by either mental recreation or occupations which interest the mind. It should, as far as possible, be incidental to pursuits which engage the attention. Adopted simply as a hygienic measure, it will rarely be persisted in. It is often essential, therefore, for patients to make a radical change in business, or, if they are able to devote their time to the restoration of health, hunting, sporting, traveling, etc., are to be resorted to as a means of securing the union of out-door life with an agreeable exercise of the mental faculties."

These words might have been written to-day they seem so modern. It has, however, taken the medical profession a great many years to become convinced of the truthfulness of these statements.

The time at my disposal will not permit me to do more than refer to the great benefits conferred upon neurasthenics by the

investigations of Beard and Weir Mitchell; and also to the thousands of infants that are saved annually by a better knowledge of the care of children.

After listening to such an able paper by the distinguished President of the State Commission in Lunacy, it is not necessary to dwell upon mental or nervous diseases. I will, however, say that if Macbeth's question, "Canst thou not minister to a mind diseased?" were asked the writer, the answer would be, yes, if the patient has myxœdema or is a cretin and young.

In 1873 Sir William Gull recognized and reported the condition now known as myxœdema, and startling results have been obtained in such cases by the use of preparations of the thyroid gland of the sheep. In cretins quite as satisfactory results have been observed.

When singing the praises of modern medicine let us not forget to give thanks for that solid structure which we have inherited from the great fathers of medicine. It is a structure founded by Hippocrates, built up by the Alexandrian School of the Ptolemies, where human bodies were dissected for the first time, embellished and improved by the Jewish and Saracen physicians of the dark ages, that finally assumed magnificent proportions under the guiding genius of the master minds of the eighteenth and first half of the nineteenth century. If they had not observed closely, thought deeply and concluded wisely, we would not to-day be able to speak of a "new medicine."

V. SPECIALTIES IN MEDICINE.

By J. MONTGOMERY MOSHER, M. D.,

Albany, N. Y.

The invitation to meet the Ogdensburg Medical Association on its fortieth anniversary could not be resisted. The sympathy shown by you during my early professional work, and the personal friendships of that impressionable period are among the mental treasures to remain with me as long as memory lasts. I little thought at the time of our farewell dinner and your hearty messages of God-speed to Dr. Cook and myself, that ten years should pass before my return; and much less has it been in my mind that the permanence of your good-will was again to be attested by the granting of this honor.

The ten years have gone with almost incomprehensible rapidity. Short as the time has seemed, great changes have taken place, not only in the membership of the Association, but in the science and practice of medicine.

The two Shermans, Bridges and Brownlow, active members of this Association ten years ago, are gone. Dr. Robert Morris had retired and was only casually known by the younger men. He died during the last year, an esteemed and respected member of the community. An unusual sense of modesty, conveyed to his family, prevented the publication of his life's work, which was well worth permanent record. Dr. Benjamin F. Sherman was a type of the old-fashioned family practitioner of whom too few remain. His biography has been printed to the permanent gain of all who study his character. It is not beyond the mark to say that in his eightieth year his vigor, bluntness, honesty and enthusiasm pervaded this Association, inspired its policy, dominated the younger members, and continues to exert its influence to this day. Of his son, Dr. John C. Sherman, contemporary with ourselves, the pleasantest memory remains. Warm-hearted, genial, overawed, perhaps, by the surpassing energy of his father, he manfully shouldered the burden of responsibility suddenly devolved upon him, and perished, a martyr to his manly ambition. Dr. Elisha Bridges was prompt, resourceful and a standing menace to any colleague who strayed too far into theory. Dr. John H. Brownlow was urbane, gentle, a most social and companionable man. The momentum given by these five men is not spent, and the vitality of the Association to-day must be largely attributed to their activity.

It remains for us to take counsel of their wisdom, that the great cause in which they lived and died, shall be maintained for the welfare of all who entrust their dearest possessions to our hands.

By the death of the elders the destinies of the Association have fallen into the hands of the younger men, whose ages of approximately forty years are identical with the age of the Association itself. This, in man, is the period of maturity, when the enthusiasm of youth is tempered by judgment and is still unaffected by the hesitation or conservatism of advancing years. These forty years, moreover, mark the epoch in which the modern science of medicine had its birth.

On an anniversary such as this it is fitting, even important, that we pause to look back upon events, to review experiences and discoveries, to study changes in methods of practice and of reasoning, and to learn, as far as we may, what these mean, in what direction they point, and what instruction may be gained to guide us in the increasing demands of the future.

Scholarship, disinterestedness and enthusiasm have always been characteristic of our profession. The boldness of Paré, the persistence and moral courage of Harvey, the martyrdom of Vesalius, show that the spirit we boast has prevailed for centuries, that the precepts of the Father of Medicine have rolled down the ages as the guide and inspiration for all time. The four qualities of every good physician, learning, sagacity, humanity and probity, were essential before the Christian era as well as to-day.

An estimate of the condition and promise of medical science forty years ago was given in 1867 by Dr. S. D. Gross in the following panegyric:

"The advances in our knowledge in medical science within the last forty years are without a parallel in any age. Never was the medical profession so busy and industrious, so zealous and enthusiastic, so honest and exact in its views and its results, as it is at the present moment. It would almost seem as if the millennium were actually close at hand. Look where we may, progress, rapid and brilliant, nay, absolutely bewildering, literally stares us in the face, and challenges our respect and admiration. One is almost ready to exclaim, 'Behold, all things are new!'"

Like the dazed octogenarian, he might well have asked, "Where is the world?"

The "changes and improvements" by which the medicine of the sixties was differentiated from the medicine of the twenties depended upon, first, the adaptation to medical uses of discoveries in other sciences.

The principles of optics adjusted to the microscope, the ophthalmoscope, and the laryngoscope had opened new fields. The use of the thermometer in the analysis of the energy of vital processes had just been announced. When this Association was organized none of these instruments had become general, but were of academic interest only. Thus, in the article on Continued Fevers in Watson's *Lectures on the Principles and Practice of Physic*, edition of 1858, the only reference to an accurate estimation of

temperature was the statement that "Dr. Batemen found that, in a majority of the cases treated by him, the heat, as ascertained by the thermometer, was about 100°," and in Tanner's Practice, edition of 1865, the clinical thermometer was not even mentioned. The hypodermatic syringe was proposed in 1859, and it was hoped that, "we shall be able, before long, to purge and vomit our patients by this simple and elegant method of medication," just as, at the present day, our money lenders can foreclose a mortgage pleasantly.

The vaginal speculum was first used in this country in 1835, and the uterine sound at about the same time. In 1867 it was boasted that the mortality of ovariectomy had been reduced to one in three and a half cases! Great improvement in the treatment of "puerperal peritonitis" was announced to have been brought about by the use of opium and the application of leeches.

Gynecology appears to have thrived as a specialty from the first, and practices which have prevailed to a late day, and will always remain a tribute to the activity as well as a comment upon the discretion of the profession came in for merited rebuke. This is shown in a caustic address before the Medical Society of New Hampshire, by Dr. W. D. Buck, who made the following plea for the "harmless, inoffensive" uterus, "stowed away in a quiet place:"

"It furnishes a capital field for surgical operations, and is nowadays subject to all sorts of barbarity from surgeons anxious for notoriety. Had Dame Nature foreseen this, she would have made it ironclad. What with burning and cauterizing, cutting and slashing, and gouging, and spitting and skewering, and pessarying, the old-fashioned womb will cease to exist, except in history. The Transactions of the American Medical Association have figured one hundred and twenty-three different kinds of pessaries, embracing every variety, from a simple plug to a patent threshing machine, which can only be worn with the largest hoops. They look like the drawings of turbine water-wheels, or a leaf from a work on entomology. Pessaries, I suppose, are sometimes useful, but there are more than there is any necessity for. I do think that this filling of the vagina with traps, making a Chinese toy shop of it, is outrageous. Our grandmothers never knew they had wombs, only as they were reminded of it by the struggle of a healthy foetus, which, by the by, they always held on to. Nowadays, even our young women must have their wombs shored

up, and if a baby accidentally gets in by the side of the machinery, and finds a lodgment in the uterus, it may, perchance, have a knitting needle stuck in its eyes before it has any."

This leads to consideration of the second factor in the development of modern medicine, the concentration of individual effort upon definite and circumscribed lines of thought. Specialization was suggested in the work of several famous men. Histology had been made a separate study by the adolescent ardor of Bichat. Schroeder van der Kolk, Sir Charles Bell, Magendie and Marshall Hall had announced the results of investigations of the nervous system, which revealed the promise of this branch of medicine. Virchow's cellular pathology changed the current of medical reasoning. "Physicians used to think in symptoms and it took them a great many years to learn that they must think also in cells and organs," wrote T. Mitchell Prudden.

Up to the seventh decade of the last century there had been no practical change in methods of instruction in medical colleges. The fundamental departments of anatomy, physiology, chemistry, materia medica, midwifery, medicine and surgery were taught by lectures which were occasionally illustrated by a clinic. The law of New York required that the diploma, which then gave license to practice, should only be awarded after the attendance of the candidates upon two of these courses of lectures, but there was no stipulation that the courses should differ. And they did not differ, except as skill in oratory was developed in the professors. But the exploitation of facts and theories before a class had its results. Deliberation and preparation of a topic for presentation to others must, of necessity, involve an inquiry into minute details. No line of argument or reasoning can be regarded as complete without cohesion and logic, and it is not improbable that close analysis and the development of minutiae, the invariable associates of rhetoric, led to the lectures upon special topics which were advertised variously as "preliminary courses," "special courses," "spring and summer terms," etc. Among these may be mentioned lectures upon endosmose and exosmose, amputations, hygiene and prophylactic medicine, venereal diseases, diseases of the breast, operative midwifery, dentition, gunshot wounds, infantile fevers, the use of the ophthalmoscope, diseases of the blood vessels, dislocations, fractures, dyspnoea and its treatment. The need of specialization was becoming evident. Clinics were also announced in special hospitals, as in those for

children and infants, for diseases of the eye and ear, and for the insane. There were indications of recognition of special departments, but these departments were few, and in the light of history serve as landmarks of the progress which was to follow. In the circular of the New York Medical College of 1860 the professorship of Infantile Pathology and Therapeutics was announced "as the first distinct chair in the United States, established for this important branch of medical science and practice," and its incumbent was Abraham Jacobi, whom to-day we all delight to honor. In the following year a professor of ophthalmic and aural surgery was added to the faculty of the same college, and microscopic anatomy was among the subjects taught. In 1864 the faculty of the Harvard Medical School was increased to nine by the addition of Dr. C. E. Brown-Séquard, who was made professor of the physiology and pathology of the nervous system.

In the centers of learning in Europe special work in laboratories and in clinics, dated from the beginning of the nineteenth century, and its influence was felt during the following fifty years in America.

In our own colleges lecture courses developed along special lines and definite facts, often of small significance, were established. But all bore upon the history and the treatment of disease, and the practitioner of medicine needed to acquaint himself with this knowledge. The time when a man, ripe in years or experience, with "gravity as a mask and mystery as a domino," and a few ponderous grunts, could dominate a sick-room, was fast passing away. The experience of others in circumscribed lines was to be recognized, and there came an inevitable interchange of thought. The smaller communities were no longer satisfied with a physician of election, chosen because of his adaptability, assurance and supposed mysterious legerdemain with roots and herbs. It was required that he should have sat at the feet of the masters.

Where there were eight and nine professors in a medical college fifty years ago there are now fifty, and here the elaboration of specialties reaches its highest point. It is not expected that each student will become expert in any or all of these branches, but he carries away the knowledge of methods which results in accuracy, particularly in the one great object of his work—**DIAGNOSIS.**

These were the conditions of medical practice when this Association was founded in 1865. Inquiries into pathology and interchange of experience led to special departments, in which the healthy and morbid action of every organ was critically scrutinized. But there was one great gap, soon to be filled by the greatest discovery of all time. It is difficult to speak of bacteriology as a specialty; its relations are universal; yet only as a specialty can its problems be solved, and its principles be made available. The possibilities of bacteriology can hardly yet be appreciated. Its beginnings were so quiet and insignificant as to pass almost unnoticed. "The first ground handful of nitre, sulphur and charcoal drove Monk Schwartz's pestle through the ceiling. What will the last do?" queries Carlisle. When Pasteur and Tyndall by the simplest of laboratory experiments annihilated the doctrine of spontaneous generation, little could have been anticipated of the resultant revolution of biological knowledge. It is for us of the present day to recognize that almost no question of medicine is solved without the information given by the microscope.

Before the practitioner may regard himself in possession of the facts necessary to intelligent action the aid of this instrument must be invoked. It must be admitted that few practitioners are qualified or able to carry on competent work in the great science of microscopy. Its use requires special training, and the department of microscopy is, in a way, a specialty in medicine. If we assume the skill, the opportunity is still lacking.

After a day, and possibly a night, of unremitting toil, the physician is not in condition to spend an evening in the delicate analysis required. It is not too much to assume that on his desk, as a result of the day's work, are a number of variously classified specimens, which might include a curettement from the uterus to determine the presence or absence of malignant disease; a specimen of blood, requiring a tedious and exacting enumeration of its different cellular constituents, a culture from a case of suspected diphtheria, sputum and specimens of urine and of gastric juice. The lives of countless patients hang every day upon just such threads as these. It is obvious that after the routine of his regular visits upon patients an active general practitioner cannot advantageously carry out these delicate investigations.

In its broadest conception medicine has to deal with the relation of the individual to the community.

Man enters the world a complex physical organism in which spiritual and material powers of tremendous scope lie latent and unrealized; after rounding out his full term of years, completing and exhausting the full cycle of his earthly capacities, he should gradually return to his original condition, and become once more an infant, drifting gently away from life, unconscious as he entered it.

Premature death is a violation of his generic rights. Its causes are to be sought and prevented, and herein lies the highest function of the physician. Two classes of causes are operative, hereditary and accidental. To the deep intricate problems involved in heredity time cannot be given now. The accidental causes are those arising in faults of the individual and the community. The former appeal personally to the physician, the latter to the combined knowledge of all physicians, as represented in the medical society. The obligation of the Medical Association to preserve the health of the community is too little understood and too seldom invoked.

Every medical association to-day contains men of widely different but converging pursuits. In each the organization must be perfected to the best advantage, for co-operation and mental aid. Whenever an active medical society exists, bickerings and disputes, which do so much to depreciate the profession in the eyes of the community, are unknown. First of all in its membership is the family doctor. Thus Robert Louis Stevenson, qualified by long years of sickness and suffering, describes him:

"Generosity he has, such as it is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

His aids are the specialists, surgeons quick of thought and hand, and those who devote their time to diseases of the eye, ear, nose, throat, skin, nervous system and mind. The bacteriologist is the right hand of all, second to each, but *primus inter pares*.

Important questions are presented every day by contagious and infectious diseases. These are not only of personal but of public significance. The causal conditions of communicable dis-

eases are little understood and much more study is needed. The delegation of this work to a practitioner, who gives his whole time to it would develop a specialty of the greatest possibilities for good. This physician might be the public officer of health of the community.

It is not improbable that midwifery may eventually have the recognition its importance requires, and will not be regarded as an incident to medical practice. The percentage of normal labors, in which an expectant attitude may be safely assumed, is very large, but in the occasional abnormal case sudden and unanticipated demands upon skill and resourcefulness are made, which are only to be successfully met by the expert. The tedious and exhausting interruptions of the general practitioner constitute a serious menace to his usefulness in his chosen work. The obstetrician should be a specialist, and the family physician should delegate obstetric work to him.

With a medical organization comprising specialists in all these departments the health of the community is safe, and in every center of population the opportunities afforded by this division of labor may be secured. An available laboratory, with a skilled bacteriologist in charge, should share with the hospital the honor of the medical citadel. The improvement in sentiment, the gain in knowledge, and the perfection in work following the establishment of a laboratory in a medical community can only be appreciated by one who has witnessed the transformation. The difficulties in the way of obtaining this boon may be easily overcome. Young men in training are ready to take charge, often with zeal which reckes too bravely of results and too little of material compensation. The value to the public is so great that city, municipal or county, or hospital authorities may be prevailed upon to supply the building. The study of epidemics, the analysis of water, the determination of diphtheria are sources of public aid; and private fees, willingly paid by the well-to-do, who appreciate the importance of researches in individual cases, will assist in the payment of salaries and other demands for maintenance. Finally the director of the laboratory should conduct all post mortem examinations, and as a member of the local medical society, may join in the completed report of cases, to the great advantage, even if occasionally, to the chagrin, of his colleagues.

The controlling spirit of all is the Medical Society. Represent-

ing the best medical knowledge of the community, its members brought in intimate contact every day with all personal and public interests in relations of confidence enjoyed by no one else, it falls far short of its opportunities if it wields not a mighty influence. Its specialists are qualified to deal with every phase of disease. The dictum of such an organization should be conclusive. Upon all questions of public health the Medical Society should express the truth in no uncertain voice. It is often said that when doctors agree their demands cannot be refused. The personal newspaper interview should be relegated to the oblivion which its offensive notoriety deserves, and in its place should appear the official announcement of collective medical opinion. The benefits of such an attitude as this cannot be over-estimated.

In such a simple combination of forces, hospital, laboratory, and society, lies the realization of ideals. The undivided house does not fall. Specialties cease to be units, but become factors in the completed whole, working out unitedly the problem of existence that "the living body is a mechanism, the proper working of which is health; its disturbance, disease; its stoppage, death."

The medical society should be the vital force to guide and control the community in the pursuit of health and happiness. It should realize its high calling, its opportunities and its obligations, and at all times should promote them.

No accident brought into being this Association. It resulted as the natural and inevitable, even if unconscious recognition of conditions, or, of changes in conditions and progress. Its sentiment is unmistakably of the best. If a motto were to be adopted it might most appropriately be that aphorism of Carlyle, which characterizes most truly its spirit: "The Situation that has not its Duty, its Ideals was never yet occupied by man."

The ideal and the duty are already before us. Lest we swell too much with pride we may take to heart Sir James Paget's reflections on the discovery of anæsthesia:

"Thinking of the pain of surgical operations, one would think that men would have rushed after the barest chance of putting an end to it as they would have rushed to escape from starving. But it was not so; the misery was so frequent, so nearly customary, deemed so inevitable, that, though it excited horror when it was talked of, it did not excite to strenuous action. The misery was put up with just as we now put up with typhoid fever and

seasickness, with local floods and droughts, with the waste of health and wealth, in the pollution of rivers, with hideous noises and foul smells, and many other miseries. Our successors, when they have remedied or prevented them, will look back on their work with horror, and on us with wonder and contempt for what they will call our idleness or blindness or indifference to suffering."

The world moves on, and we are incidents in its progress ;

"We see but darkly
Even when we look behind us, and best things
Are not so pure by nature that they needs
Must keep to all, as fondly all believe,
Their highest promise."

VI. PROGRESS IN SURGERY.

By GRANT C. MADILL, M. D.,

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The task of reviewing the advances in the field of surgery during the period since the organization is such an enormous one, that it becomes discouraging to think of attempting it. Necessarily the limits of this paper must make the story a very imperfect one and all that I can hope to do is to mention a few of the most conspicuous changes in surgical practice. Before taking up the subject proper of this paper I wish to pay my most profound respects to the surgeons of 1865 and the early years of this association. Every practitioner was equipped with the knowledge and skill to perform most of the surgical operations. Men who limited themselves to the exclusive practice of surgery did the surgery of the eye, nose and every other department which is now the specialist's field.

They had been using anæsthetics for only nineteen years and, undoubtedly, some of the older charter members had done major operations without the aid of these pain destroying agents. They amputated limbs, removed tumors, excised the breast, elevated depressed bone in fractures of skull, did herniotomy for strangulated hernia, sequestrotomy for necrosis of bones, and, with a mechanical skill and anatomical knowledge that gave surprising results when we stop to consider that it was done before the revolutionizing discovery of antiseptics,

The method of amputating a limb, as described by Gross in his "System of Surgery," fifth edition, published in 1872, gives a very good idea of the method of doing surgical operations and the treatment of wounds during the early period of our society.

Amputations were major operations in those days. We have no major operations now.

"The patient anæsthetized: a Petit's tourniquet is applied so that the pad is placed over the main artery, either horizontally or crosswise.

"The amputating knife is from nine to twelve inches in length with a moderately thick back, spear pointed and furnished with a stout, rough ebony handle to prevent it from slipping out of the hand if it should become smeared with blood. The principal edge should extend the whole length of the blade and be in the best possible condition for executing its important office, well tempered and sharp. The edge upon the back should not be longer than an inch and a half. With such an instrument, properly managed, nearly all the amputations of the body may be performed with great neatness and celerity."

Then follows a discussion as to formation of flaps, directions as to use of saw, etc.:

"The arteries are tied with silk with the ends left long. The limb is placed in an easy, elevated position, the flaps left apart and covered with light compresses wet with cold water and frequently irrigated for four or five hours; at the end of which time the wound will usually be glazed with lymph and all danger of bleeding be past.

"Bleeding having ceased the flaps are carefully stitched in place, the ligatures are brought out at the nearest points and the intervals between the sutures are covered with long and rather narrow strips of plaster to admit of proper drainage. This should be still further favored when the breach is very large and deep by the insertion of a slender tent in the lower angle of the wound and by strict attention to the position of the stump.

"The wound being firmly closed at all points, the matter, of which there is nearly always more or less after all amputations, accumulates in the depths of the stump, around the bone and among the muscles, thus causing necrosis of the former and affording the veins and lymphatics of the latter an opportunity of conveying the fluid into the system and thereby inducing blood poisoning.

"All this risk may be effectually prevented by adopting the plan

here suggested of keeping a long slender and well oiled tent in the lower part of the wound for the first thirty-six or forty-eight hours; at the end of this time it may be carefully removed and any pus that may be present gently pressed out. A gum elastic tube may now, if necessary, take the place of the tent with a view to more ready and steady drainage; or, if the suppuration crisis is passed the foreign body may be dispensed with. When numerous ligatures are required for arresting the bleeding in the larger amputations the best place is to bring out their extremities at the nearest points of the flaps, instead of at the edges of the wound. The adhesive straps, must, if possible, extend four or five inches beyond the upper extremity of the flap so as to prevent retraction of the integument and also to quiet the muscles and bring them well forward over the bone. I have been in the habit, for many years, of beginning the application of the roller at the part of the limb nearest to the trunk, carrying it firmly and equally downward to the very verge of the stump, which is then enveloped by a few crucial turns of the bandage to give it greater support. No other dressing is necessary."

He then describes the swelling, redness, free discharge of pus, sloughing away of ligatures, secondary hemorrhage, affections of the stump such as caries and necrosis and the indications for reamputation which seems to have been frequent.

The healing of the wound required weeks or months, and the patient was often reduced to an extreme degree of emaciation by the pain, fever, chills and exhausting discharge. Erysipelas, gangrene and blood poisoning were common complications of all wounds.

In 1865 Lister began his studies that changed this picture, completely revolutionizing surgical practice both in theory and practice.

If Lister's discovery had done nothing more than hasten the recovery and banish the long days of suffering that followed surgical operations then in vogue, he would have accomplished more than could have been dreamed of forty years ago.

In the summer of 1876 Lister attended the International Medical Congress in Philadelphia and demonstrated his then methods and convinced a few surgeons of their immense advantages. While the principles established by Lister remain the same the method of attaining the results have been greatly simplified.

One of the greatest improvements in operative surgery following the adoption of the antiseptic methods, was the discovery of the absorbable ligature and the proper sterilization of silk and other ligature material so that their presence in a wound is ignored by the tissues.

The control of arterial hemorrhage was, previous to antiseptic days, one of the most serious problems that the surgeon had to deal with. Secondary hemorrhage was always the source of great anxiety, when a vessel of any size was tied, until after the twelfth to fifteenth day when the ligature separated.

McDowell and the early abdominal surgeons who removed "ovarian dropsy" used silk, smoothly waxed, taken from the red, velvet lined operating case, to tie the pedicle of the tumor and allowed the ends to remain outside the abdomen until, by a process of sloughing, they came away.

An improvement in controlling the bleeding from the pedicle was the clamp, then came the snare or angiotribe, then the actual cautery was used to sere the pedicle and the stump dropped back into the abdomen. Finally Lawson Tait perfected the method of employing a heavy silk ligature using Staffordshire knot to tie the pedicle, returned the stump to abdomen and closed completely the incision.

To-day we tie large arterial trunks with a ligature of cat-gut, kangaroo tendon or sterilized silk, close the wound accurately by suture with scarce a thought of the possibility of secondary hemorrhage.

While abdominal surgery preceded antiseptic surgery by several years it was not until after the new method of dealing with wounds had become fully established that the real abdominal surgery began. One organ after another in this cavity has been attacked and to-day there is not an organ between the pelvic floor and the diaphragm that has not been incised and excised in whole or in part.

It is hard for the surgeon of the present day to think of a time when there was no appendicitis and yet the members of this organization that first met forty years ago knew nothing of this disease. They saw circumscribed abscesses in the right iliac region which were opened by an incision after a period of poulticing, but it remained for the surgeon, instead of the pathologist, to demonstrate the exact seat of the inflammatory lesions about the cœcum.

The surgeon by his bold invasion of the closed cavities of the body during life, has done much to clear up many other pathological problems and establish a rational treatment for the same.

In fact there is not a cavity, and scarcely an organ of the body but what may be reached by the surgeon.

Forty years ago gun-shot wounds of the abdomen were beyond the help of the surgeon. Treatment was entirely expectant and consisted in the administration of opium. The brain was not the object of surgical attack although trepanning in the treatment of compound fractures of the skull was common.

Of the most recent operations for relief and prolongation of life, I shall mention gall bladder operations, removal of calculi from the gall bladder and its ducts, removal of the gall bladder itself when diseased, the surgical treatment of ulcer and cancer of the stomach, the operation of prostatectomy for relief of retention of urine resulting from enlarged prostate, removal of stone from kidney and ureter.

One of the greatest factors in the progress and development of modern surgery has been the establishment of splendid hospitals all over the world.

Equally important is the modern trained nurse, without whom it is impossible to undertake the care of any serious surgical case.

While we congratulate ourselves on the progress that we have made in surgical practice during the past forty years we must not think that during the forty years previous to 1865 that surgery had been at a stand-still.

The history of surgery has been one of steady progress along down the centuries of time. The treatment of wounds to-day seems ideal and comparing our standard of good results to-day with that of pre-antiseptic days it would seem that we had about reached perfection. Would it be wild imagination to think that the next forty years will see similar strides?

VII. PROGRESS IN THE TREATMENT OF INSANITY.

By RICHARD H. HUTCHINGS, M. D.,

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The middle of the last century witnessed, particularly in America, a wonderful awakening of public interest in the insane. The older superstitions had given way but prejudice remained and still beat down the lunatic as a broken and useless creature,

damned by an evil heredity, if not by God, and from whom no useful thing could ever be expected.

In America, at about the time the Ogdensburg Medical Association was formed, indeed in the very year 1865 the public conscience was pricked to the core by the disclosures of the investigation of the insane by the State Medical Society, which its secretary, Dr. Willard, was empowered by special statute to conduct. I shall not refer to this phase of the subject, already so ably covered by Dr. Mabon, except to say that in this State, as well as other states and countries, one is struck in reviewing the literature of the period by the fact that this great movement was one of humanity and charity, rather than of science. It is true that medical men took the lead, but it was because the condition of the insane appealed to their pity, the wretchedness which they saw around them cried aloud for relief.

In the annual report of the Friends Asylum in Philadelphia, issued in the year 1865, the Superintendent, Dr. Worthington, after commenting upon the want of interest on the part of physicians in the subject of insanity, said: "Many persons seem reluctant to believe that medicine can minister relief to a mind diseased and are much more disposed to regard institutions for the insane merely as places of confinement and safe keeping than to consider them as they really are, hospitals for the recovery and cure of their patients."

What was true of Philadelphia was true of the country at large and of many foreign countries, but though medical men found little to attract them in the details of the subject, they united with the enlightened public to demand that the creature comforts should no longer be denied the insane. And so came about the State Lunatic Asylums, places where warmth, cleanliness and comfort prevailed, but seclusive, self contained and apart from the general interests of the scientific as well as of the secular world, and here psychiatry rested. The improved care in such institutions stimulated a remarkable demand for the admission of patients, and the problem of housing, feeding and protecting their charges engrossed the attention of medical officers, so that for another long period but little advance was made except in the perfection of internal administration.

There is no doubt that the old classification of mental diseases, which is still current in many institutions, exerted consider-

able influence in repressing new ideas regarding mental diseases, and if the mere statement of this classification by writers was not sufficient weight, the learned societies adopted classifications, which added the weight of their considerable influence against any innovation.

An independent observer who saw a ray of light and attempted to examine insanity from a new standpoint was crushed beneath the weight of the authority that all forms of excitement were mania, which could only vary in its intensity or duration; that all uneasy states were melancholia, which could vary even less than mania, and so on with other forms of insanity.

Looking back upon the subject one can conceive no greater error than limiting the range of individual opinion, and fixing by statute, as it were, the varieties and manifestations of insanity. Any young man who attempted better things was confronted by the official classification of some learned society, and since his conclusion differed from this infallible law, it must, therefore, be wrong. The spirit of intolerance could go no further.

Bayle, as early as 1822, separated from other forms of dementia, the disease which we now recognize as paresis. For more than forty years it was not well understood and forty years later in one of the reports of the Utica State Hospital a case was reported of melancholia accompanying general paralysis. Nevertheless, the discovery of Bayle was, perhaps, the greatest advance that had ever been made in clinical psychiatry, and paresis is, to-day, the best understood and the most perfect type of insanity that is known.

At the very time that classifications were being adopted and promulgated by the British Medico-Psychological Association, the American Medico-Psychological Association, and the International Congress of Mental Medicine, which was largely under the influence of the French and English studies in aphasia, particularly of sensory aphasia, were beginning to work for the improvement of our conception of mental disease. Considerable discontent must have been evinced in Germany at the hide-bound attitude of the associations since Neumann declared that there was only one insanity, or as many mental disorders as there were diseased persons. Neumann made considerable impression on Kahlbaum, who seems to have been the first to perceive that most of the then recognized forms of insanity

were simply symptom groups, the underlying condition of which was not understood.

Kahlbaum, about 1875, described a form of insanity characterized by alternating periods of depression, excitement and stupor, with characteristic motor disturbance, and ending in profound dementia. He called this disease *katatonia*. The prognosis was, as a rule, unfavorable, though recovery was admitted in a certain number of cases.

About the same time Hecker described a group of cases, which occurred about the time of puberty, which were quiet in their onset and terminated rather rapidly in profound dementia. This was called *hebephrenia*. Schule, in 1886, confirmed the observations of Hecker and suggested for this group of cases, the name *dementia praecox*. Other observations subsequently broadened the conception of these two diseases, and finally Kraepelin, in the sixth edition of his book, brought together the various types of alienation, which were now grouped in this general term, *dementia praecox*.

For a long time alienists have recognized a type of insanity characterized by maniacal outbreaks, recurring periodically and in which there is an intervening lucid interval. Not infrequently one attack of mania is replaced by an equivalent attack of depression.

The most striking feature of these cases was the period of complete restoration. It was also noticed that irregular varieties of this disease occurred where there was an interval covering several years, and cases where the individual had a single attack with corresponding complete recovery.

Kraepelin seems to be the first to have grasped the truth that insanity of this type differed radically from others, presenting a somewhat similar onset, in that it is never succeeded by dementia. He grouped together circular insanity and the irregular forms, which had been called acute mania and acute melancholia into one class and called it manic depressive insanity, and demonstrated that by certain characteristic symptoms, which could be early detected, a diagnosis could be made and a favorable prognosis given. This was a long step in advance, as heretofore there had been no safe ground upon which to prognosticate the outcome of an attack of excitement or depression in its earliest stage.

Much discussion has been going on in the journals in regard to this group, many holding that the class is too large; that no benefit is shown over the old diagnosis of acute mania and acute melancholia, but since there are several forms of insanity, beginning with excitement or depression, which belong to other groups with less favorable prognosis, there seems to be sufficient ground for these to be put apart as a single class, and particularly as there are few patients afflicted with manic depressive insanity, who do not, at one time or another, show both depression and excitement.

One distinct advance of recent years, which originated with the Germans, but which has been elaborated and improved by Dr. Adolph Meyer and Dr. August Hoch, is in the clinical study of cases. By the methods which they have introduced in this country, we have abandoned those vague and unsatisfactory terms which have been used heretofore in describing cases as excited, violent, noisy, and replaced them with more specific statements, which would clearly record the mental reaction, and have arranged a scheme of examination covering essential features in the form of questions and answers and exact expressions, using whenever possible the words employed by the patient. This permits very accurate comparison of cases with each other, and the grouping of those whose reactions are similar.

We are now accumulating case histories of the greatest value, intelligible not alone to him who wrote them, but which present such a clear picture of the patient's behavior and reactions that they can be correctly interpreted by any one. It depends not upon the judgment of the examiner; for if the conclusions are erroneous the facts are so shown in the case records that they may be corrected by another.

This method of studying the mental processes and physical symptoms of the insane promises much more rapid progress in the immediate future than has been yet seen in this specialty.

The establishment of training schools for nurses and the great success that has attended them in State Hospitals places at the command of the physicians resources which, forty years ago, were not dreamed of.

Those who had to do with the construction and organization of the St. Lawrence State Hospital saw clearly the trend

of modern psychiatry. The policy then established, of giving to each recoverable patient the greatest degree of individual attention and concentrating the medical and nursing force upon the reception wards, was an innovation which has since been very generally followed in other institutions. The importance of thorough physical examination and the correction of every deviation from the normal were insisted upon as the essential points in the treatment of every case. This and other similar experiments in the care of the acute and presumably curable insane have been carried a step further in the establishment in connection with some of our prominent city hospitals of wards insane have been carried a step further in the establishment in connection with some of our prominent city hospitals of wards or separate buildings for the early treatment of the insane.

In this State one in connection with the Albany Hospital, known as Pavilion F, organized and conducted by a former member of this society, and one connected with Bellevue Hospital, are doing excellent work. It is true the latter has been in existence for a long time, but was merely a place of detention, where no treatment was given until it came under the control of another honored member of our society, when it was developed into a psychopathic department, second to none.

Psychiatry has not shown the rapid growth and perfection of some of the sister sciences like surgery. Its growth has been necessarily dependent upon the improvements in other branches as microscopy, pathology and physiological chemistry. But psychiatry is not idle. The study of the problems concerning the human mind are going on in every civilized country and we have every reason to look hopefully to the future. There is reason to believe that insanity is not increasing as rapidly as the general population, and it will decline when the public, through education, can be brought to a clearer understanding of its causes and prevention.

Editorial

Let some large institution lead the way to better quality of work by admitting frankly, as Berlin and Paris have done, that there are grave dangers in numbers and that there are limits of student aggregation which can not be safely transcended, and concede that there are higher aims than horizontal expansion, and that the phenomenon of altitude should have more attraction. In a word, let them look up, not down, squarely face the future and step out from the trammeling influence of the past. Let them purge themselves of professors who ought themselves to be in the high school, and take more interest in education and less in instruction.

Adolescence.

G. STANLEY HALL.

The seventy-fifth session of the College was Albany Medical opened at noon on Tuesday, September 19, 1905, College after the usual custom of an introductory address, which, this year, was given by Prof. Albert Vander Veer. Dr. Vander Veer chose as his theme "Organization, Methods and Responsibilities in the Study of Medicine." His address, which will be published in the ANNALS in the near future, was in part historical, and concluded with an appeal to the students for the exercise of their best efforts.

Announcement was made of two important additions to the teaching corps, those of Dr. Holmes Jackson, as adjunct professor of physiological chemistry, and of Dr. John A. Sampson, as lecturer on gynecology. Both these gentlemen come well-equipped for their special work. The prompt organization of the department of physiological chemistry is in every way commendable. The faculty of the college, realizing that "the way to begin is to begin," appointed a special committee from its number last Spring to put in motion this work. Credit is due Professors Tucker, Gordinier and Pearce, for the presentation at the beginning of the term of a well equipped laboratory. This has been constructed by a change in what has been known for years as "Alumni Hall," and Dr. Jackson states that in capacity, ventilation, lighting and attributes conducive to proper study, this room leaves nothing to be desired. Other changes in the college building were necessary. The surgical museum of the first floor has been combined with the main museum, and the large room thus vacated has been converted into a lecture hall of ample dimensions. The recitation rooms under the amphitheatre have been refurnished,

and the building generally renovated. It was with no small degree of pride that the authorities of the college were able to offer to the incoming class such commodious and attractive quarters.

Never was the College in better condition to really instruct its students. The several laboratories bear witness to the modern conception of an institution of learning, and will take several courses hitherto taught only by didactic lectures. In clinical work the senior students will find their time almost wholly occupied by the hospitals, dispensaries and the obstetric guild. There is every reason to believe that the graduate, after four years practical, analytical work, will be equipped for practice, and each term of the College sees this equipment on a higher and broader basis.



**The Revision
of the
Pharmacopœia**

The Eighth Decennial Revision of the United States Pharmacopœia presents a number of radical changes from previous editions of that work. So radical are many of these changes and so

justified are they by the altered conditions of medical practice and advance in the study of the materia medica that every practitioner of medicine, whether a believer in drugs or not, must, in order not to run the risk of grievous errors in his prescriptions and statements, make a careful study of this latest revision.

Some of the changes which have been made are in:

Terminology—" * * * * In the case of newly admitted articles" titles have been chosen "as are in harmony with general usage and convenient for prescribing; but in case of chemicals of a definite composition a scientific name" has been given, "at least as a synonym." Much may be said, both for and against these changes but it does seem that in many of them, instead of simplifying and making more practical the materia medica, they tend to drive the average practitioner into the open arms of the manufacturing pharmacist who puts the same article before him under a short and easily remembered name. For instance, what has been so long known under the trade name of "Phenacetin," has been given a name in conformity with its composition, Acetphenetidinum; "Aristol" is called Thymolis Iodidum; "Cystogen" or "Urotropin" rejoices in the appellation, Hexamethylenamina; "Trional" staggers under the hybrid title of Sulphonethylmethanum; while "Sulphonal" is cut off with

but an insignificant Sulphonmethane. On the other hand, Antipyrina for "Antipyrine," Chloralformamidum for "Chloral-amide" and Liquor Formaldehydi for "Formalin," "Formol," "Methylaldehyde," "Oxymethylene," "Methanal," "etc.," seem not only justified but most desirable.

Liquor Potassii Hydroxidi and Liquor Sodii Hydroxidi may be chemically more desirable than the familiar Liquor Potassae and Liquor Sodae of our school days; Salol certainly is Phenylis Salicylas; Sodii Hyposulphis is Sodii Thiosulphas; and Unguentum Acidi Carbolici is Unguentum Phenolis, but just as certainly, while such changes may be euphonious are they sure to be ignored because they are not practical.

What formerly were known as "Extracta Fluida" are now given the compound title, Fluidextracta, a change which allows of the separation of these preparations alphabetically from other extracts.

One of the most important changes is that of:

Strength.—The recommendations of "The International Conference for the Unification of the Formulas of Heroic Medicines," held in Brussels in 1902, that certain preparations of the heroic remedies be made of uniform strength has been adopted. Of these changes the most important are the following:

TITLE.	U. S. P., 1890.	U. S. P., 1900.
Caffeina Citrata Effervescens..	2.0 Gm. in 100....	4.0 Gm. in 100.
Extractum Opii.....	18.0% Morphine...	20.0% Morphine.
Oleatum Hydrargyri.....	20.0% HgO.....	25.0% HgO.
Tinctura Capsici.....	1 Gm. in 20 Cc....	1 Gm. in 10 Cc.
Tinctura Strophanthi.....	1 Gm. in 20 Cc....	1 Gm. in 10 Cc.
Lithii Citras Effervescens....	About 17.0%.....	About 5.0%.
Opii Pulvis.....	13% to 15%.....	12% to 12.5%.
Opium Deodoratum.....	13% to 15%.....	12% to 12.5%.
Potassii Citras Effervescens...	About 48%.....	About 20.0%.
Tinctura Aconiti.....	1 Gm. in 2.85 Cc..	1 Gm. in 10 Cc.
Tinctura Belladonnæ Foliorum	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Cannabis Indicæ....	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Colchici Seminis ...	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Digitalis.....	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Hyoscyami.....	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Kino.....	1 Gm. in 10.0 Cc..	1 Gm. in 20.0 Cc.
Tinctura Lobeliæ.....	1 Gm. in 5.0 Cc...	1 Gm. in 10 Cc.
Tinctura Opii (Morphine).....	1.3 to 1.5 Gm. in 100 Cc.	1.2 to 1.25 Gm. in 100 Cc.
Tinctura Opii Deodorata (Mor- phine.)	1.3 to 1.5 Gm. in 100 Cc.	1.2 to 1.25 Gm. in 100 Cc.
Tinctura Physostigmatis.....	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Stramonii.....	1 Gm. in 6.67 Cc..	1 Gm. in 10 Cc.
Tinctura Veratri.....	1 Gm. in 2.5 Cc...	1 Gm. in 10 Cc.
Unguentum Phenolis.....	About 5% Phenol..	About 3%.
Unguentum Sulphuris.....	About 30%.....	About 15%.
Vinum Colchici Seminis.....	1 Gm. Colchicum Seed in 6.67 Cc.	1 Cc F. E. Colchi- cum Seed in 10 Cc

The change most to be recommended is the introduction of the *Assay Process*.—Standards of absolute strength have been established for more than fifty official preparations and now one may prescribe Aconitum, Belladonna, Colchicum, Stramonium, Pilocarpine and similar drugs and be sure of just how much of the active principle his patient will get in each dose.

Additions.—One hundred and seventeen additions have been made and among the more important are to be found:

Aconitina.	Opium Granulatum (for making Tinct.)
Adeps Lanæ.	Petrolatum Album.
Bromoformum.	Pilulæ Laxativæ Compositæ (to replace the familiar "A. S. & B.").
Chloralformamidum.	Pilulæ Podophylli, Belladonnæ et Capsici.
Cocaina.	Pulvis Acetanilidi Compositus (to replace Acetanilide Comp., Aulde.)
Colchicina.	Quininæ Salicylas.
Glandulæ Suprarenales Siccæ.	Serum Antidiphthericum.
Glandulæ Thyroidæ Siccæ.	Strophanthinum.
Hydrastina.	
Oleatum Atropinæ.	
Oleatum Cocainæ.	
Oleatum Quininæ.	

Among those additions the most conspicuous by its absence is Heroin.

One hundred and fifty-eight unimportant drugs have been omitted.

An innovation is the introduction of an average, approximate dosage in both the metric and the apothecaries' system, but these doses are not to be regarded "as obligatory on the physician or as forbidden him to exceed them whenever in his judgment this seems advisable."

There can be no question but that this revision marks a distinct advance over the previous ones or that it will meet with the general approval of both professions interested. S. L. D.

Scientific Review

A REVIEW OF THE THIRD REPORT OF THE CAROLINE BREWER CROFT CANCER COMMISSION OF THE HARVARD MEDICAL SCHOOL.

I. *A Contribution to the Classification of Tumors.* By F. B. MALLORY, M. D.

This paper presents the beginning of an attempt at a classification of tumors based on a more careful study of the histological differentiation of the cells and intercellular substances of the tumors than has hitherto been possible. In this communication tumors arising from neuroglia, smooth muscle, and connective

tissue cells are considered. Normal or neoplastic tissues formed by these cells are each of them characterized by the presence of fibrils which in the middle of their course are for a greater or less distance in intimate contact with the protoplasm of the parent cell. These fibrils vary according to the kind of cell producing them, the neuroglia cells producing *neuroglia* fibrils, the smooth muscle cells *myoglia* fibrils and the connective tissue cells *fibroglia* fibrils. Of these three kinds of fibrils the neuroglia fibrils have been longest known and most studied, the myoglia fibrils have only recently attracted much attention and the fibroglia fibrils were announced as discovered only a little over a year ago.

Recent advances in staining methods has made it possible for these fibrils to be studied accurately and while they have many points in common such as would lead one to group tumors derived from any one of these three types of cells together under one general head, the differences are such as to enable one to distinguish much more sharply than hitherto as regards the origin and differentiation of the cells comprising the tumors.

Gliomas comprise a distinct class of tumors originating from neuroglia tissue and whether slow or rapid in growth should be distinguished sharply from sarcomas which are of entirely different origin, but which, until the advent of the neuroglia tissue stains, were often confused with the gliomas. In this connection Mallory reports a tumor originating subcutaneously over the coccyx and producing secondary growths in both groins with recurrence after operation. Upon ordinary examination this tumor presented many features suggesting both sarcoma and carcinoma but a study of the intercellular fibrils shows it to be certainly a glioma probably originating from misplaced embryonic tissue.

Leiomyoma. In addition to its generally described characters the smooth muscle cell possesses two kinds of fibrils, the "Grenz-fibrillen" (Heidenhain) or "myoglia fibrils" (Benda) and the "Binnenfibrillen" (Heidenhain) or internal fibrils of which the myoglia fibrils are histologically the more important. They are situated at the periphery of the cell lying in or on its limiting surface and run parallel with its long axis. A cross section of a smooth muscle cell shows about a dozen myoglia fibrils to a cell lying in the limiting membrane of its protoplasm. They can be demonstrated by a variety of staining methods but they degene-

rate so quickly that post-mortem material is practically useless for their study. Tissues from surgical operations immediately fixed in appropriate solutions are required. These myoglia fibrils are easily demonstrated in leiomyomata and are characteristic of the smooth muscle cells no matter what their rate of growth and the variations in the general morphology of the cells. Mallory was able to demonstrate these fibrils in the cells of a rapidly growing infiltrating tumor of the uterus which had the general characteristics of a sarcoma but which he believes must be regarded as a malignant leiomyoma. This finding is of particular interest supporting as it does the observations of several recent workers who have attempted by other methods to prove that many of the so-called "sarcomatous degenerations" of fibroids are in reality examples of a malignant metaplasia of the muscle cells themselves.

Connective tissue cell tumors. Connective tissue cells produce besides the elastic and the ordinary connective tissue fibrils another kind of fibrils known as fibroglia fibrils which differ chemically from the other types of fibrils and can be stained differentially. These fibrils bear much the same relation to the connective tissue cell that the neuroglia fibrils bear to the neuroglia cells but are in general distinctly finer than the fibroglia fibrils.

The study of a series of fibromata, fibro-sarcomata, and spindle cell sarcomata show much the same condition of the fibroglia fibrils as do normal and inflamed connective tissue and Mallory believes that these tumors should be considered by themselves as an entity using the term "fibrosarcoma" for the most rapidly growing tumors of the connective tissue type, thus giving up the term "spindle cell sarcoma."

II. *On the Nature of the Cell Inclusions of Cancer.* BY ROBERT B. GREENOUGH, M. D.

In this paper the writer reviews the previous work which has been done by himself and other workers on the subject together with the various hypotheses which have been advanced concerning the nature of these inclusions. A statistical study of the data obtained from the examination of 481 specimens reported on by himself, Nichols, Nösske and Honda, shows that these cell inclusions are almost constantly present in cancer of glandular

origin but they are never found in cancer of non-glandular (squamous cell origin; they are found in non-cancerous lesions of the mammary gland and occasionally in other gland epithelium in non-cancerous conditions and also in hypernephroma. They are almost invariably absent in sarcoma (only one doubtful case in this series.)

The fact that their presence is almost exclusively confined to types of cells having normally secretory functions suggests the possibility that they may have something to do with this phase of the cell activity and their size, structure and staining reactions are such as to justify the assumption that they are vacuoles in the cell protoplasm and contain a material which is coagulated and shrunken by the use of tissue fixatives. The occurrence of vacuoles of this nature is chiefly a phenomenon of cell secretion and they are usually situated in the protoplasm of the cell between the nucleus and the lumen. Secretion vacuoles of the form of typical cancer cell inclusions are present in the lumen side of the cell in non-cancerous diseases of the mammary gland and the inclusions in adeno-carcinoma occupy a similar position. In the more advanced carcinomas the lumen is lost and the cell inclusions are often of large size probably due to the fact that the material forming the vacuoles cannot escape from the cell. In very rapidly growing cancers the cell inclusions are infrequent which may be accounted for by the secretion hypothesis because, in rapidly multiplying cells, the secretive activity is diminished or lost.

Owing to the above facts Greenough believes that the great majority of all inclusions in cancer can best be accounted for by the theory that they are secretion vacuoles.

III. The Effects of the Röntgen Ray upon Cancer. BY ROBERT H. VOSE, M. D., AND WALTER C. HOWE, M. D.

In this paper the writers have summarized the clinical results and the histological findings in about one hundred and twenty cases of carcinoma treated by the X-ray. A number of the more typical individual cases are described in detail for purposes of illustration. The following are the conclusions reached: "From this investigation it seems that cutaneous cancer treated by X-ray undergoes a degeneration, not peculiar to this form of treatment, or distinguishable histologically from degeneration

from other causes. The vascular changes are limited to an endarteritis; new formation of blood vessels occurs if healing takes place, as in the process of repair elsewhere; there is an increase of elastic tissue. Mitotic forms are less abundant after treatment.

Clinically, taken as a whole, the cases show:

(1) That the only cure of cancer by the X-ray is by destruction and exfoliation. This, at once, limits its value to superficial cases.

(2) That this destructive process is a slow one and acts very superficially. Since it is well known that many essentially chronic superficial epidermoid cancers may be removed permanently by the slightest surgical procedure, that course seems preferable to the somewhat tedious treatment by X-ray, and as they both may fail, an extensive surgical operation, if necessary, may be undertaken more promptly in the former case.

(3) That being non-selective in its action, the X-ray cannot be used strongly enough to effect destruction of anything but the shallowest tumors without serious injury to the overlying and surrounding tissues, or in other words, producing such a burn as experience shows in all probability never would heal."

IV. *Implantation of Tissues and its Relation to Cancer.* By EDWARD H. NICHOLS, M. D.

Theories concerning the possible origin of cancer can be grouped under two general heads: First, the parasitic theory, the advocates of which hold that the epithelial proliferation seen in cancer is the result of the presence of specific parasites which have the power of stimulating the irregular overgrowth of epithelium. Second, the biological theory, the advocates of which hold that the epithelial proliferation in cancer is due to the development of inherent or acquired peculiarities of the cells themselves so that the cells become not only capable of indefinite multiplication but are also capable of living in abnormal relationship as regards the other body cells and thus become of themselves capable of living a parasitic existence.

The writer gives a critical review of the arguments for and against these theories discussing the subject under the following heads:

I General argument for the parasitic nature of cancer.

- (1) Apparent relative increase of cancer.
- (2) The formation of metastases.
- (3) The occurrence of cachexia.
- (4) Possibility of direct transfer from person to person.
- (5) Self inoculation by cancer.
- (6) Direct inoculation of human cancer into animals.
- (7) Inoculation of cancer or malignant tumor into another animal of the same species.
- (8) The parasitic production of epithelial proliferations analogous to the epithelial proliferations in cancer.

These arguments he summarizes as follows:

From a consideration of the facts already presented it may be said that (1) the relative increase of cancer is disputed and not proved; (2) local causes of the origin of cancer are improbable; (3) the metastases in cancer, although taking place by the same routes as the metastases in infectious diseases, are of an absolutely different origin, and constitute the strongest theoretical argument against infectious or parasitic origin; (4) the cachexia in cancer, probably, is not entirely due to the character of the cancer itself, but is often dependent upon secondary bacterial infection to another by contact; (5) transplantation of cancer from one human being to another by contract; (6) transplantation of cancer from one animal to another of the same species is well verified; (7) the production by any known parasite of epithelial proliferation analogous to cancer has not been demonstrated.

II Special reasons for belief in parasitic origin of cancer.

- (1) Blastomycetic theory.
- (2) Protozoon theory of cancer.

Although a number of so-called cancer parasites have been described no one has ever been able to isolate them from the including cells and to use them in reliable inoculation experiments and moreover it is altogether probable that these so-called parasites are simply secretion vacuoles or other products of cell activity.

III Theories as to the biological origin of cancer.

Under this head he discusses the theories of Thiersch, Cohnheim, Ribbert and Bashford and Murray and arrived at the following conclusions:

On the whole, in regard to the biological theories of the origin of malignant and benign tumors as enunciated by Thiersch, Cohnheim and Ribbert, it may be said that such hypotheses or a combination of them, is at present supported by a considerable number of clinical and experimental facts; that certain tumors, dermoid cysts, can be produced experimentally under the conditions of the hypotheses, and that in one doubtful case a truly malignant tumor appeared, and finally that fetal tissues undoubtedly have a much greater inherent power of growth than do adult tissues.

Too lately to allow of verification by others, certain observations have been made which give support to the theory that cancers may be considered to be a parasitic individual engrafted on a normal individual, and that they are produced by the conjugation of cells in a way analagous to conjugation of sexual cells which produce a normal individual. Farmer, Moore and Walker investigated cancers, and concluded that the reduction in the number of chromosomes in the mitosing cells took place in the same way as in the ripening of the sexual cells of animals and plants, and that the number of these chromosomes were half as numerous as in the somatic cells. They studied not only human cancers, but also cancers in various lower animals. These observations show a series of changes in the nuclei of malignant tumors throughout the whole extent of their known zoological distribution parallel to those characteristics seen in the maturation of the sexual elements of the metazoa. If these observations are confirmed, it will be a most important step in elucidating the origin and development of tumors.

The writer reports the results of a series of experiments carried out with the idea of ascertaining whether previously normal epithelial, or other tissues, either foetal or adult, would if simply freed from its normal environment lead to the formation of tissue analogous to a tumor growth. His experiments were carried out under the following heads: The implantation of testicular, ovarian, renal and liver epithelium into the same animal, the implantation of liver epithelium into the kidney of the same animal, the implantation of adult or fetal epidermis into the same animal, the implantation of adult uterine epithelium pregnant and non-pregnant into the same animal and the implantation of placental tissue into the same (maternal) animal. In a number of these experi-

ments the implanted tissues were able to maintain their vitality and grow to a greater or less extent. This work is summarized as follows:

(1) Certain types of epithelium (epidermis) both adult and fetal, can be experimentally removed from their normal position and implanted into another part of the same animal, and under those circumstances can maintain their "potentiality of growth," retain their own peculiar character, and produce nodules analogous to dermoid cysts or more complicated teratomata.

(2) In no case has any epithelium of a highly differentiated function been seen to maintain its power of growth or to proliferate.

(3) The "potentiality of growth" is greater in the case of fetal than it is in that of adult tissues.

(4) In no case has any infiltration of surrounding tissue by the transplanted epithelium been seen, nor any tendency to epithelial metastases.

(5) Certain fetal connective tissues (cartilage) can be transplanted in the same way as epithelial tissues and retain their "potentiality of growth."

(6) Transplanted fetal tissues do not reproduce the stage of development at which they are transplanted, but tend to reproduce the ultimate stage of their normal development.

E. MACD. STANTON.

Public Health

Edited by Joseph D. Craig, M.D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, AUGUST, 1905

Deaths

Death rate	15.77	14.63	15.42	18.94	18.00
Consumption	13	12	16	18	15
Typhoid Fever.....	3	3	3	2	3
Scarlet Fever.....	0	0	0	0	0
Measles	0	0	0	0	0
Whooping-cough	0	1	0	1	1
Diphtheria and Croup....	2	2	1	1	2
Grippe	0	0	0	0	0
Pneumonia	0	0	0	0	4
Broncho-pneumonia	2	2	2	0	1
Bright's Disease	14	8	12	15	10
Apoplexy	6	9	3	9	6
Cancer	7	10	8	7	13
Accidents and Violence...	9	6	7	7	20
Deaths over 70 years.....	15	16	18	30	24
Deaths under 1 year.....	25	17	36	25	24
Total deaths	134	126	131	161	153
Death rate	15.77	14.83	15.42	18.94	18.00
Death rate less non-resi-					
dents	13.18	14.01	14.36	17.53	16.47

Deaths in Institutions

	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent	Resi- dent	Non- resi- dent
Albany Hospital	11	7	5	4	7	6	12	9
Albany County Jail.....	0	0	0	0	0	0	0	0
Albany Orphan Asylum.....	0	0	1	1	0	0	1	0
County House	2	0	1	0	10	2	4	0
Homeopathic Hospital	2	0	2	2	1	0	2	1
Hospital for Incurables.....	0	0	0	0	0	0	0	0
House of Good Shepherd.....	0	0	0	0	0	0	0	0
House of Shelter.....	1	0	0	0	0	0	0	0
Friendless Home	1	0	0	0	0	0	0	0
Little Sisters of the Poor.....	0	0	2	0	0	0	1	0
Public Places	1	0	0	0	1	0	0	1
St. Francis de Sales Orphan Asylum	0	0	2	0	0	1	0	0
St. Margaret's Home.....	0	0	2	1	0	0	4	2
St. Peter's Hospital.....	6	0	3	1	7	3	6	0
St. Vincent's Male Orphan Asy- lum	0	0	0	0	0	0	0	0
St. Vincent's Female Orphan Asylum	0	0	0	0	0	0	0	0
Home for Aged Men.....	0	0	1	0	3	0	0	0

Births at term.....	82
Marriages	66
Still births	7
Premature births	0
Total.....	155

PLUMBING INSPECTIONS

In the Bureau of Plumbing, Drainage and Ventilation, there were 226 inspections, of which 148 were of old buildings and 78 of new buildings. Forty-four iron drains were inspected, 26 connections, 40 tile drains laid, 3 urinals, 2 latrines, 37 cesspools, 48 wash basins, 50 sinks, 42 bath tubs, 35 wash trays, 2 trap hoppers in yard, 79 tank closets. One hundred forty-one permits were issued, of which 109 were for plumbing and 32 for building. Thirty-five plans were submitted, of which 8 were of old buildings and 27 for new buildings. There were 2 houses tested on complaint, 1 with blue, red, and one with peppermint test. There were also 21 water tests. Eighteen houses were examined on complaint. There were 35 re-examinations of these houses and 10 cases found valid and 8 without cause. There were 2 plumbing violations.

BUREAU OF CONTAGIOUS DISEASES

Cases Reported

	1901	1902	1903	1904	1905
Typhoid Fever.....	24	9	11	21	12
Scarlet Fever.....	4	5	3	1	3
Diphtheria and Croup....	27	20	10	9	5
Chickenpox	0	2	1	0	0
Measles	1	1	4	0	2
Whooping-cough	0	0	0	1	0
Consumption	0	0	3	2	4
Totals	65	37	32	34	26

Contagious diseases in relation to Public Schools

None reported.

Number of days quarantine for diphtheria:

Longest.....21 Shortest..... 8 Average.....16 $\frac{1}{4}$

Number of days quarantine for scarlet fever:

Longest.....11 Shortest.....11 Average.....11

Fumigations:

Houses.....6 Rooms.....10

Cases diphtheria reported..... 5

Cases of diphtheria in which antitoxin was used..... 5

Cases in which antitoxin was not used..... 0

Deaths after use of antitoxin..... 2

The city of Albany is still in a healthful condition, the death rate being considerably less than a year ago for the corresponding month. It is to be noticed that the deaths from consumption are less than in any year for the last three and that other contagious diseases are practically of the same number with the exception of pneumonia, which shows a slight increase. There were four deaths from pneumonia. A very large increase in the number of deaths is found under the head of accidents and violence in consequence of the disaster at the Myers' Store. Had it not been for these additional thirteen deaths the death rate of the city would have been of the most flattering character. As it is, the death rate less non-residents dying in public institutions is 16.47. The death rate less non-residents and the unfortunates killed in the disaster would make the death rate of the city only 14.90, which would be an extremely satisfactory showing for the city.

Six hundred thirty-two dead animals were removed by the collectors of dead animals, of which 456 were kennel dogs and cats. The remainder, 177 dead animals, were removed from the city.

The plumbing department shows a total of 226 inspections made, of which 78 were of new buildings. This, together with the fact that 27 plans were filed for new buildings, indicates activity in the building trades in the city. There were 2 violations of plumbing laws found, which were later brought to trial.

In the Bureau of Nuisances considerable activity was shown, but from this time on it is to be expected that there will be fewer complaints, a condition which characterizes the approach of cold weather.

A total of 31 work certificates were issued to children.

The most interesting part of the report for the month appears in the cases of contagious diseases reported. There has been a very considerable reduction in the number of cases of diphtheria. A number of cases of consumption were reported, in no sense representing the entire number of cases in the city. It is to be hoped that physicians will report more accurately the number of cases of this disease in this city, as is done in other cities. Practically the same number of cases of typhoid fever were reported as through the year 1903 and 9 less for the corresponding month one year ago. Of the 12 cases reported, 9 are known to have contracted the disease outside of the city or else are under suspicion of having done so, and but 3 cases are believed to have developed within the city, a condition which still proves the purity of our water supply.

Medical News

Edited by Eugene E. Hinman, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR AUGUST, 1905.—Number of new cases, 91, classified as follows: dispensary patients receiving home care, 1; district cases reported by health physicians, 3; charity cases reported by other physicians, 41; patients of limited means, 46; old cases still under treatment, 36; total number of patients under nursing care during the month, 127. Classification of diseases (new cases),

medical, 30; surgical, 4; gynæcological, 1; obstetrical work of the Guild, 23 mothers and 23 infants under professional care; dental, 3; contagious diseases in medical list, 5; transferred to hospitals, 4; deaths, 3.

Special Obstetrical Department: Number of obstetricians in charge of cases, 4; attending obstetricians, 3; medical students in attendance, 1; Guild nurses, 5; patients, 6; number of visits by head obstetrician, 8; by attending obstetricians, 10; by the medical students, 25; by the Guild nurses, 54; total number of visits in this department, 97.

Visits of Guild Nurses—all departments: Number of visits with nursing treatment, 727; for professional supervision of convalescents, 191; total number of visits, 918. Four graduate nurses and five assistant nurses on duty. Cases were reported to the Guild by two of the health physicians and by 25 other physicians and by two dentists.

FIFTH ANNUAL CONFERENCE OF SANITARY OFFICERS OF THE STATE OF NEW YORK.—The meetings will be held in Assembly Chamber, Capitol, on October 4 and 5, 1905. The following program has been announced.

Opening Session, Wednesday, October 4, 2.30 p. m.: Address of welcome, Hon. F. W. Higgins, Governor, State of New York; Addresses by Dr. Eugene H. Porter, State Commissioner of Health, and Hon. Julius M. Mayer, Attorney-General, State of New York.

Evening Session, October 4, 8 p. m.: Paper on "State Assistance in the Local and Institutional Control of Contagious Diseases," by Dr. F. F. Westbrook, Director Laboratory, State Board of Health, Minneapolis, Minn., President American Public Health Association; Paper on "Pathology of Diphtheria" (illustrated with lantern slides), by Dr. Richard M. Pearce, Director Bender Hygienic Laboratory, Albany, N. Y. Discussion.

Morning Session, October 5, 9.30 a. m.: Paper on "Statistical Studies of Pneumonia and Typhoid Fever," by Dr. John S. Fulton, Secretary, State Board of Health of Maryland, Baltimore, Maryland; Paper on "Status of Pneumonia and Cerebro-Spinal Meningitis as Contagious Diseases," by Dr. William H. Park, Director Bacteriological Laboratory, Department of Health, New York City; Paper on "Some Isolated Outbreaks of Cerebro-Spinal Meningitis in New York State," by Dr. H. D. Pease, Director of Antitoxin Laboratory, State Department of Health, Albany, N. Y. Discussion opened by Daniel Lewis, M. D.

In the afternoon of October 5th at 1 o'clock, the guests and members of the conference will take a special train at the Union Station and proceed direct to the new Sewage Disposal Plant of the village of Saratoga Springs, as guests of the State Department of Health.

Evening Session, October 5, 8 p. m.: Paper on "The Pollution of Streams and the Natural Agencies of Purification," (illustrated), by Mr. George C. Whipple, New York City; Paper on "The Purification of Public Water Supplies," (illustrated), by Mr. Robert Spurr Weston, Boston, Mass.; Paper on "Water Resources of this State Available for Potable Water Supplies," by Prof. O. H. Landreth, Consulting Engineer, State Department of Health; Paper on "Description of Methods for the Collection of Samples of Water for Chemical and for Bacteriological Analysis," by Dr. Willis G. Tucker and Dr. R. M. Pearce.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The President of this Society has appointed as his business committee: Dr. Leo H. Neuman, Chairman, Albany; Dr. Algernon T. Bristow, Brooklyn, and Dr. Herbert U. Williams, Rochester. To members of this committee communications regarding the program of the next meeting may be addressed.

INDIANA MEDICAL COLLEGE.—September 1, 1905, by the unanimous action of their respective Boards of Trustees, assembled in Indianapolis, The Medical College of Indiana was made the Medical Department of Purdue University, with the title of *Indiana Medical College, The School of Medicine of Purdue University*. The Medical College of Indiana was founded in October, 1869, and has given continuous instruction in Indianapolis for the thirty-five succeeding years. It has graduated over 1,600 students, has some three score teachers and unexcelled clinical facilities. These include the Bobbs' Free Dispensary in the college building, where 15,000 cases are treated annually and used for daily clinical teaching in seven different sections; also, the City Hospital with 200 beds utilized for morning bedside clinics; St. Vincent's Hospital, in which the college maintains public wards for clinical teaching; the City Dispensary, and the Central Hospital for the Insane, where clinical courses in nervous diseases are held. The properties of the college worth \$100,000, the alumni list, the student body of 270 students, the history and traditions of the college are all now merged in and are now an integral part of Purdue University, the leading professional school of Indiana, and subject to its governing body. For the first time in the history of medical education in Indiana, its pioneer medical school has formed a university union, which makes it an integral part of the State System of Education in the same way and manner that the Medical Department of the University of Michigan is related to the State System. For the present year the functions of the Medical College will be carried on exactly as indicated in the 36th Annual Catalogue already issued and distributed. The College will remain permanently in Indianapolis, the place of its origin and development, a city presenting the clinical material required for a modern school of practical medicine. All inquiries and correspondence should be addressed as heretofore to the Secretary of the Medical College of Indiana.

Dr. HENRY JAMESON, *Dean*.

Dr. GEORGE J. COOK, *Secretary*.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS.—The fifteenth annual meeting of this Association will be held at the Academy of Medicine, New York City, November 17-18, 1905, under the presidency of Dr. G. P. Conn, of Concord, N. H. One-half day of the meeting will be devoted to a symposium on "Injuries to the Head and Spine." Noted surgeons will take part in the discussion. A cordial invitation is extended to the profession. GEO. CHAFFEE, *Secretary*, 338 47th Street, Brooklyn, N. Y.

PERSONAL.—Dr. ARTHUR R. REYNOLDS, late commissioner of health of the City of Chicago, announces that he has accepted the position of medi-

cal director of the French Lick Springs Hotel Company, at French Lick, Indiana. Physicians' directions relative to their patients will be strictly observed, and correspondence is invited.

—Dr. EDWARD L. JOHNSON (A. M. C. 1891), who has recently been in the far West, has located at Maine, N. Y.

—Dr. LEWIS R. OATMAN (A. M. C., 1891), formerly of Gloversville, N. Y., has removed to Greenwich, N. Y.

—Dr. SHERWOOD LE FEVRE (A. M. C., 1891), is at Central Bridge, N. Y.

—Dr. CHARLES E. MARSHALL (A. M. C., 1893), formerly at Lead, South Dakota, has removed to Westfield, N. Y.

—Dr. EDWARD N. BIBBY (A. M. C., 1897), formerly at Glens Falls, N. Y., has removed to East Middleburg, Vt.

—Dr. HAROLD E. HOYT (A. M. C., 1904), is at No. 195 Hamilton Street, Albany, N. Y.

DEATHS.—Dr. JAMES HENRY SALISBURY (A. M. C., 1850) died at his country home at Dobbs Ferry, N. Y., August 28, 1905

—Dr. LEMUEL H. HAMMOND (A. M. C., 1858) died recently at the home of his daughter, at Waterbury, Conn.

In Memoriam

LEMUEL H. HAMMOND, M. D.

Dr. Lemuel H. Hammond, of the Class of 1858 of the Albany Medical College, died recently at the home of his daughter in Waterbury, Conn. For his class report in 1898, Dr. Hammond prepared the following autobiographical sketch:

"After leaving college I located at Pascoag, R. I. Here I found not only practice, but a loving wife, who has, for thirty-eight years, been my companion and helpmeet. She was taken home February 4, 1897. After remaining here two years, I located in Oaklawn, Worcester County, Mass. Five years of my life were spent here, then for three years I was in West Boylston, Mass. Since then, for twenty-eight years, I have been in Worcester, Mass. During this time my health has been poor—at times very sick—so that many times I have had to get away from my work months together; consequently I have not been able to push my work as many others have done. With all this I have succeeded in building up a practice of which I am not ashamed. Am a member of the Massachusetts Medical Society and Worcester Medical Association; have been city physician of Worcester. Since fifteen years of age I have been interested in church and Sunday school work. For twenty-eight years I have been connected with the First, or Old South, Church, of Worcester. Have been blessed with two children."

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Saunders's Question Compend. Essentials of Bacteriology, being a Concise and Systematic Introduction to the Study of Micro-organisms. By M. V. BALL, M. D. Fifth edition, 1904. W. B. Saunders & Co.

This book contains much more material and is better arranged than many compends, though it cannot take the place of the larger treatises on the subject nor even of the better manuals. However as a help to the student at examination time or even during the course in connection with larger books, it has its use. Some errors are found in the text, examples of which are the statements that diphtheria bacilli do not stain by Gram's method, and that malaria and hydrophobia are caused by bacilli which the reader is led to assume are easily cultivated.

C. K. W., JR.

The American Year-Book of Medicine and Surgery, being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Journals, Monographs and Textbooks of the Leading American and Foreign Authors and Investigators, Collected and Arranged under the General Editorial Charge of GEORGE M. GOULD, M. D. Medical Volume. W. B. Saunders & Co., Philadelphia and London. 1905.

This book is already so well known as hardly to need further commendation and review. The present volume is as excellent as its predecessors, and combines a very extended review of the literature of the preceding year with such a nice degree of brevity that the reader is able to seize quickly upon the principal facts and advances, without at the same time losing the point of view of the various authors quoted. The section on general medicine naturally consumes the largest amount of space, occupying as it does about one-third of the volume. Subsections of particular value are those upon typhoid fever, and other acute infectious diseases (including those due to protozoa and other animal parasites), diabetes and diseases of the circulatory system.

Among other subjects considered in detail in other sections are radium and radio- and photo-therapy. It is impossible to mention all of the principal subjects spoken of even in detail.

The announcement is made that the section upon Public Hygiene and Preventive Medicine formerly in charge of the late Dr. Samuel Abbott is in the future to be directed by Dr. John S. Fulton of Baltimore, Secretary of the Maryland Board of Health and Editor of the *Maryland Medical Journal*.

One most excellent feature of the work is the exhaustive index which it contains, forty-five pages double column in fine type, thus enabling one to find the subject he wishes with the least possible trouble and loss in time. The volume is to be most highly commended both to the general practitioner and to the specialist in general medicine or the other branches which it represents.

C. K. W., JR.

Infectious Diseases. Edited by J. C. WILSON, A. M., M. D., Professor of Medicine in the Jefferson Medical College; Physician-in-charge of the German Hospital, Philadelphia; Physician to the Jefferson and Pennsylvania Hospital, etc. An authorized translation from "Die Deutsche Klinik," under the general editorial supervision of JULIUS L. SALINGER, M. D. With two colored plates and sixty illustrations. New York, D. Appleton & Co. 1905.

This work is a translation of one of the series of Modern Clinical Medicine and is worthy of commendation. It is a most excellent presentation of the medical diseases arising from bacterial invasion and undoubtedly will find cordial endorsement from that large class of medical practitioners in this country, interested in general medicine. The American editors have brought the volume up to date and have contributed several articles on infectious diseases which enlarge the sphere of usefulness of the book for English speaking members of the medical profession.

It is difficult in a work of such general excellence to select any portion for special critical analysis, but the articles on typhoid fever and malarial diseases will perhaps appeal especially to those in search of a thorough, modern and exhaustive consideration of these important infections. The chapter on typhoid fever has been written by F. Klemperer of Berlin and C. Liebermeister of Tübingen. The names of the authors are in themselves a guarantee of authoritative utterance. For completeness of detail, clearness of expression and scientific accuracy nothing can be desired.

The chapter on malarial diseases is an excellent illustration of the scholarly character and profound ability of its author, F. Löffler of Griefswald. There are some fine plates in color accompanying the article.

Sepsis is treated of by Jürgensen of Tübingen and pneumonia, acute articular rheumatism and acute tuberculosis find prominent consideration.

The work of the editor is to be commended. He has succeeded in producing a work expressed in attractive English which will undoubtedly find a place in the library of many American physicians.

The press work and plates are satisfactory.

J. D. C.

A Textbook of the Practice of Medicine, for Students and Practitioners.

by HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson College Hospital, etc., etc. Illustrated with 129 Engravings and 10 Plates in Colors and Monochrome. Lea Brothers and Company, Philadelphia and New York. 1905.

The author of this text book has been known long and favorably as a medical writer, particularly in the field of materia medica and therapeutics. He represents the embodiment of the modern author in the capacity to absorb, digest and reproduce all that is valuable in the voluminous literature of the day. In this work the conditions of practice are faithfully represented and fewer drugs are exploited than may have been antici-

pated. In fact so little personality is injected that the book suffers somewhat in individuality. The descriptions are clear, terse, comprehensive and fully up to date. Chapters on tropical diseases have been included, under the supervision of Dr. Charles F. Kieffer, U. S. A. The book can be recommended.

SURGERY

Edited by A. Vander Veer, M. D., and Arthur W. Elting, M. D.

Contribution to the Pathology and Therapy of Diseases of the Knee Joint.
(*Beitrag zur Pathologie und Therapie der Kniegelenkserkrankungen.*)

A. HOFFA. *Berliner klinische Wochenschrift*, January, 1905.

The writer calls especial attention to a class of cases whose chief complaint is pain in the knee joint. He states that these cases have been usually grouped under the head of joint neuralgias, but most of them have been demonstrated to be due to some definite disturbance of the joint. He states that it is necessary to distinguish in this connection between four different affections:

- (1) arthritic muscular atrophy;
- (2) internal derangement of the knee joint;
- (3) a limomatous formation in the joint;
- (4) the presence of a free body in the joint.

He believes that it is possible to differentiate each of these conditions in practically every instance.

He devotes considerable attention to what he calls arthritic muscular atrophy, which is characterized mainly by pain in the joint which comes on at a greater or lesser period after some injury to the joint, or which may have followed directly upon such an injury. The pain is usually referred to some distinct part of the joint and is most often localized along the inner side just below the patella. There is never any evidence of inflammation about the joint. Practically all that one finds upon examination is a marked atrophy of the quadriceps extensor muscle. He regards this atrophy as the cause of the pain and states that one of the functions of the quadriceps is to render the joint capsule tense. If the quadriceps is more or less atrophied this tenseness is loosened and a bit of the capsule may be caught between the patella and the condyles of the femur, or between the femur and the tibia. The treatment of these cases is most satisfactory and consists of massage and gymnastics, the object of which is to strengthen and develop the quadriceps. The atrophy of the muscle the writer believes to be due to an irritation of the nerves of the joint, as is usually the case in atrophies associated with joint disturbance. Inactivity he believes plays but a very minor rôle.

The internal derangement of the joint is due either to a loosening or dislocation of one or sometimes both of the joint cartilages. The forces which produce this lesion need not be at all excessive, and it frequently occurs during ordinary exercise. Sometimes frequently repeated slight traumatism have produced the condition. He describes the rather charac-

teristic symptoms, chiefly sudden pain and disability, usually with more or less swelling. This disappears fairly rapidly, but often leaves the joint somewhat impaired and very prone to subsequent attacks of similar character. Examination of these cases shows rather a typical condition, which is characterized by tenderness over the joint space on either the outer or inner side of the knee according as the outer or inner cartilage has been injured. Frequently one can feel a slight projection outward of the loosened cartilage, and sometimes this projection can be increased by manipulation. In some instances, simple reposition is followed by a spontaneous fastening of the cartilage and no further trouble ensues. In many instances, however, the disturbance recurs, and then an operation is to be advised. This consists either in fastening or removing the cartilage, the latter being usually the preferable procedure.

Considerable attention is devoted to the so-called lipomatous tumor in the joint which characterizes the third variety distinguished by the writer. In some instances this is due to a fatty degeneration of the synovial papillae, while in other instances a solitary sub-synovial lipoma may develop. These may vary in size from a cherry to a hen's egg, are usually pedunculated and situated on the inner side of the joint, and composed entirely of fat. In addition to this, there is still another condition, characterized by an inflammatory fibrous hyperplasia of the fatty tissue, which is normally present at both sides of and beneath the patellar ligament. This hyperplasia results either from trauma or from chronic irritation as in the case of a foreign body in the joint. The symptoms resulting from this condition resemble those of arthritic muscular atrophy or of the internal derangement, and result from the fact that the hyperplastic tissue becomes caught between the articulating surfaces. Examination of these patients usually shows a typical swelling just below and at both sides of the patella. This swelling is of rather a soft doughy character. Treatment of this condition is a careful excision of the hyperplastic tissue, the results being satisfactory in practically every instance.

The writer also emphasizes the importance of recognizing the presence of free bodies in the joint, and states that this is practically always possible by means of the X-ray.

In conclusion he urges the more careful examination of the joints of the individuals who present any of the symptoms which have ordinarily led to the diagnosis of joint neuralgia.

Concerning Fractures of the Vertebra. (Ueber Wirbelfrakturen.)

O. CROCE. *Deutsche medizinische Wochenschrift*, No. 11, 1905.

The writer emphasizes the great necessity of employing the X-rays in all cases of injuries in which the objective condition does not at all correspond to the subjective discomfort, and believes that this is particularly true of injuries to the spine. He mentions an extremely interesting medico-legal case, in which a physician had failed to recognize the relationship between an injury to the spinal cord and some distortion of the cervical vertebræ, as the result of which after the lapse of four years the patient died. Nine months after death the body was exhumed, and investigation

showed that there had been a fracture of the second, fifth, sixth and seventh cervical vertebrae, which would have been perfectly readily recognized had a radiograph been made.

He reports two extremely interesting cases: The first, that of a young woman 28 years of age who fell from a high wagon and was unconscious for a few moments, but soon recovered. The second day after the accident there was severe pain in the neck, increased by bending the head. There was also pain on swallowing. Because there was no improvement after several days she was sent to a hospital, where she remained for seven weeks. The condition did not improve; neither did it become worse. There was no paralysis and no sensory disturbance. A radiograph showed an oblique fracture of the body of the fourth cervical vertebrae, which allowed a sinking down of the vertebral column on the right side with a corresponding separation of the vertebrae on the left, as a result of which the pain and discomfort in the neck undoubtedly resulted.

It is also a well known fact that paralytic symptoms may not appear until a long time after the injury, as in the case reported by Bernstein, in which the first evidence of paralysis appeared seventy days after the injury, followed thirty-one days later by death.

The second case reported by the writer was that of a man of 26 years, who was struck by a wagon in the region of the left trochanter. At the time he was admitted to the hospital the entire injury appeared to be confined to the region of the trochanter. Rest in bed, local applications, etc., allayed the swelling but did not produce any improvement in the parasthesia or the lancinating pains in the leg. A radiograph of the case showed a fracture of the lamina of the fifth lumbar vertebra, which was the undoubted cause of the pain and sensory disturbance in the leg.

In conclusion, the writer emphasizes the fact that relatively slight trauma may produce a fracture of the vertebrae, and emphasizes the necessity of the employment of the X-rays in all suspicious cases of this character; and also calls attention to the fact that it may be necessary to make several plates before a positive diagnosis can be made.

NEUROLOGY

Edited by Henry Hun, M. D.

The Pathology of Friedreich's Ataxia.

HARRY RAINY. *Review of Neurology and Psychiatry, April, 1905.*

Dr. Rainy has examined a post-mortem specimen of two cases of Friedreich's ataxia, described clinically by Dr. Mackie Whyte in 1898. He decides that the lesion is primarily one of nerve tissue and not a disease of the neuroglia, and he sums up the results of his examination as follows:

1. A typical case of Friedreich's ataxia of long standing (twenty-two years) may show no changes in the brain or cerebellum, therefore changes in these parts of the nervous system do not constitute a necessary part of the pathology of this disease.

2. The appearances of the diseased tracts in the posterior and lateral columns of the cord are sufficiently similar to incline one to the belief that in both they are consequences of the same pathological cause.

3. The distribution of the lesion, especially as it is found in the posterior columns and sensory nerves, indicates that the nervous elements are themselves primarily involved, and that the increase in interstitial tissue is secondary.

4. The cause of the disappearance of the nerve fibrils is to some extent a matter of speculation. So far as the writer's observations have hitherto gone, the evidence is distinctly against its resulting from changes in the pia mater or vessels of the cord, and one is left to assume that certain of the nerve elements are developmentally defective. This defect may be due to imperfect myelin production, or to a condition that for want of more definite knowledge may be called deficient longevity, or to an imperfect faculty of repair under the strain of continued use. It is also conceivable that some of the nerve elements may be specially susceptible to the action of a hypothetical toxin which might be postulated as being formed in this disease, but of such a toxin we have absolutely no evidence.

Of course the ultimate problem that confronts one is why certain nerve tracts should show a special lack of vitality in a hereditary disease like Friedreich's ataxia, but though this is a problem of the utmost importance, the clue to its solution is still unattained.

5. The degenerated nerve structures in the cord are replaced by neuroglial elements; the earliest stage consists in the appearance of fibrils of interstitial tissue. These, as the process advances and cicatrization occurs, form whorls or "tourbillons" which catch up and distort or destroy healthy nerve fibres. Finally, where the sclerosis is most advanced, the whorls coalesce into a felted mass of fibrils that occupy the whole substance of the most fully degenerated areas.

Acute Ascending Paralysis in Cases of Chronic Cystitis.

T. J. WALKER. *The Lancet*, March 11, 1905.

The author has met with three cases of long-standing chronic cystitis, which terminated fatally by acute ascending paralysis of a most malignant type.

The first patient sustained an injury to the perineum at fifteen; ten years later came under observation for retention, and at forty had an acute exacerbation of cystitis with stricture. He was under treatment for a month, and one morning felt numbness in the feet and some loss of power. Death followed in eighteen hours. In the second case the acute ascending paralysis occurred during chronic cystitis, and resulted fatally in forty-eight hours. The third case was of prostatic disease and chronic cystitis of many years' duration, in which death occurred in forty-eight hours after the first indications of the ascending paralysis.

These cases are to be differentiated from urinary paraplegia, which was described by Stanley in 1833, and has since been recognized. Leyden recalls that Troja in 1780 stated that violent inflammation of the kidney

may produce an irritation of the nerves of that organ which may extend to the nerves of the spinal cord, giving rise to paralysis and loss of sensation in the lower limbs. The writer believes, in his cases, that the specific microbes of the cystitis were conveyed by the nerves to the cord, in which they developed rapidly, producing a virulent intoxication, in tissues already weakened by long-standing cystitis.

Concerning Hystero-Epilepsy. (Ueber Hystero-Epilepsie.)

PAUL STEFFENS. *Archiv für Psychiatrie und Nervenkrankheiten*, XXXIX, 3, 1905.

In 1899 Steffens asserted that hysteria and epilepsy in certain cases are not to be differentiated, but represent the same morbid process in varying form and under varying conditions of intensity and permanence. The thesis has since had considerable discussion. Steffens now states definitely that it is not intended to assert that there are three distinct diseases, hysteria, hystero-epilepsy and epilepsy, but that under the title hystero-epilepsy are represented certain symptoms, common to both hysteria and epilepsy, arranged in such a way as to impart characteristics of both diseases. The origin and course of hystero-epilepsy are outlined as follows:

Hystero-epilepsy is a psycho-neurosis, and belongs to the group of diseases included broadly under the term "degeneration." As from the pure psychosis hystero-epilepsy is distinctive, in that the disturbances are not limited merely to the normal course of the mental processes, but incidentally are associated with purely physical disturbances of innervation, that is to say, that certain symptoms are presented which indicate a disturbance of the normal relations between processes of thought and activities of the body.

A wide range of symptoms appears in hystero-epilepsy. On one side is a great variety of sensory disturbances, as the stigmata of hysteria, attacks of drowsiness, certain dazed or bewildered mental states, and other indications of the so-called *petit mal*; on the other hand, the severest mental disturbances; and midway between these, convulsive seizures of the widest variety and severity.

In the midst of these symptoms, either singly or in groups, often occur events expressive in part of pure hysteria, and in part of pure epilepsy; in the majority of cases they are commingled in the same patient, and in such a confused way, that differentiation into any simple group is impossible. Through the whole complex is displayed a change in character, in some cases appearing as caprice; in others as uncertainty, deceitfulness, irritability or dulness, and these symptoms may appear in different combinations in the same cases, and associated with the other manifestations as described.

The prognosis can only be determined in each individual case of hysteria after prolonged and careful observation of the course of the disease, and with especial consideration of the hereditary record.

As to treatment we may rest upon the results of experience, that in some groups success follows the use of the bromides, and in others re-

course to psycho-therapeutic measures; and it may be borne in mind that frequently both methods are serviceable in the same case.

Diagnosis and Prognosis of Ménière's Symptom-Complex. (Erfahrungen über Diagnose und Prognose des Ménière'schen Symptomenkomplexes.)

L. V. FRANKL-HOCHWART. *Jahrbücher für Psychiatrie und Neurologie* XXV Bd., 2 u. 3 Heft, 1905.

Ménière's disease is a group of symptoms consisting of deafness associated with the triad, tinnitus aurium, vertigo and vomiting, with which frequently occur pressure upon the head, cerebellar ataxia, now and then nystagmus, and, in occasional cases, diarrhoea.

I. The disease may develop instantaneously in persons with previously intact organs of hearing; either

(1) In an apoplectic form (the real Ménière's disease of many authors, so-called apoplectic deafness), in which the anatomical condition is a hemorrhage into the labyrinth, or infiltration of the acoustic nerve, the attack occurring in (a) individuals with normal ears and otherwise healthy; or (b) individuals with normal ears, but suffering from some general disease, as leucaemia, nephritis, lues, and metalues, as tabes; or

(2) In certain traumatic forms, in which the triad of symptoms follow immediately upon the injury, as in severe contusions of the head, the caisson disease, and mighty detonations.

II. The disease accompanies preceding aural diseases of either acute or chronic character. Vertigo develops suddenly in an already present affection, or gradually and simultaneously with it. Now and then its appearance in the course of a chronic affection of the ear is slow, beginning with a slight sensation of giddiness, and passing on to severe attacks.

In these two groups of cases of true Ménière's disease the lesion may be

(a) a middle ear disease, either acute, which is infrequent, or chronic, which is very frequent;

(b) a labyrinthine disease, either acute, which is infrequent, and among which are included the epidemic forms of deafness and vertigo in children, as the abortive form of cerebrospinal meningitis; or chronic, quite frequent; or in the transitory toxic forms from quinine and salicylate poisoning, etc.;

(c) processes in the external auditory canal, as inspissated wax, which is very infrequent; and

(d) the vertigo occurring in acute and chronic diseases of the acoustic nerve, its nucleus and its intracerebral ramifications. Here belong certain cases of locomotor ataxia, tumors of the acoustic nerves, and basal tumors compressing them; and also the acute form of febrile facial paralysis, associated with herpes, first described by Frankl-Hochwart, as polyneuritis cerebialis Ménièreiformis.

III. Transitory auditory vertigo occurs through external influences or operations, as irrigation of the ear, catheterization, nasal douching, galvanization of the head, severe turning shaking movements, sea-sickness, and loud sounds.

IV. There also occur pseudoménière attacks; paroxysmal vertigo, tinnitus and vomiting when the ear is normal, as the aura and epileptic or hysteric seizures, and these may be occasionally observed in neurasthenia and migraine.

The prognosis in Mènière's disease is not entirely good. In the apoplectic form some improvement in hearing may follow and this is apt to be preceded by diminution of the vertigo and the tinnitus; complete recovery is hardly to be expected. When the disease complicates chronic affections of the ear, the restoration of normal conditions is unfortunately rare. Intermissions are not infrequent, and these, in the lighter cases, may last for weeks or months.

Local treatment is occasionally beneficial, but general management of the case is by far more important. As far as possible an open-air life with rest and absence of irritation should be followed. Small doses of bromide or iodide of soda, cool foot baths, and tepid sitz-baths are valuable. Galvanization of the head has given relief to many patients. In some cases a high altitude has proved beneficial.

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

Keratitis Profunda.

W. T. HOLMES SPICER. *Ophthalmic Review*, London, January, 1905.

Of interstitial keratitis, many cases are found in which no trace or history of syphilis, congenital or acquired, can be obtained; in which the local changes resemble each other but in which the causes vary greatly or cannot readily be discovered. The author has assembled 54 such cases, in which the observations had been fairly complete and continuous and it appears to him, from examination of such cases, that this disease stands out as a distinct, clinical entity. Thirty-four of them occurred in males; the fact that so large a majority were found in this sex is accounted for by the greater liability, of members of it, to injury, as well as by their greater addiction to alcohol. The patients' occupations were most various and conclusions from them are not to be considered. The average age was 40, the oldest being 65. Eight admitted the excessive use of alcohol; nearly all took alcohol and very many took what was undoubtedly too much; ten of them drank beer in excess, "two of them were brewers' men, and one a potman, of almost unlimited capacity for beer." Nearly all the most acute and severe cases occurred in this group. Over-eating is less easy to identify, but it was clearly present in some cases, combined, generally, with over-drinking, especially of beer. Nine patients had typical gout, seven others were subject to rheumatism or rheumatic pains, one to sciatica. Disturbances of the intestinal tract, faecal retention or chronic constipation with indigestion, were present in seven cases; carious teeth or pyorrhœa alveolaris were found in four cases; dysentery was present in two cases; four of the cases occurred just before or after the termination of pregnancy.

Some of the patients were broken in health or prematurely old, ill nourished, with blueness of the extremities, with defective circulation or were the subjects of chronic bronchitis. Finally there were some of them, a small number, who seemed to be in perfect health, were abstemious and regular in habits, but who inherited a strong family history of gout. Seven cases seem to have been actually started by an injury, such as an abrasion, a slight blow or a foreign body. Over-eating and drinking were responsible for three-fourths of the total number of the cases. The average duration of the disease, from the first appearance of symptoms till the disappearance of all congestion, was three months, the shortest one being of only three weeks while, in the case of a woman, who, despite all advice, suckled a child till it was eighteen months old, the keratitis lasted twelve months. The right and left eyes were each affected 27 times, and both eyes were involved in five cases.

The acuteness of vision, after recovery, was often not obtainable or not noted, because patients would cease attendance before the cure was complete. In nine cases it amounted to 6/6, in two to 6/9, in one to 6/12. Some would suffer permanent damage, judging from the amount of opacity present when last seen, but, in the less severe cases, the prognosis is good.

As regards local changes, moderate ciliary congestion appears soon after the first complaint of dimness of vision; it is generally dusky in color and rarely severe. In the first few weeks separate vessels spring from behind the scleral edge and run towards the center of the cornea. The opacification of the cornea takes one of two forms—the central disc and the peripheral cone. The disc form occurred in 25 cases, the conical in 22; in a few cases the two forms were mixed. Examined under magnification, at its first appearance, the opacity is seen to consist of fine striated lines, "striated keratitis," which was present in 34 cases.

Oedema of the cornea is almost always present. Very often, in addition, there appear to be little bullæ on the surface, like clear, black drops; these are sometimes fairly large and if two or more adjacent bullæ give way, an appearance of superficial ulceration arises.

If a drop of fluorescein be placed in the conjunctival sac and allowed to remain there a few minutes, before being washed out, in certain cases the deepest part of the cornea seems to take on a delicate, green stain; it is even possible to determine the exact location of the stain, either with the hand loupe or by the use of the corneal microscope. Deposits on the back of the cornea do not stain, or, if they do, they are opaque and do not show their posterior, stained surface.

In 34 cases, iritis was not present. In them the pupil dilated at once, as the result of a single instillation of atropin. Iritis was present in 14 cases. The tension of the eye was raised, in four cases.

A marked feature of the disease is oedema of the cornea, shown chiefly in the swollen and bullous appearance of the surface.

The substantia propria is also oedematous, but this cannot be recognized.

In the posterior part of the cornea, the striated lines are also evidence of oedema; such lines are almost certainly produced by wrinkles in Desemet's membrane, caused by oedema of the posterior surface of the cornea.

As parenchymatous keratitis can be produced experimentally by interference with the blood supply, it is probable that in keratitis profunda, a variety of parenchymatous keratitis, the true seat of the disease is in the nutrient blood-vessels, and that the different forms which it manifests may be due to the different vessels affected, not necessarily the long ciliary arteries or the venae vorticosae, but the vessels which more directly supply the cornea.

As to treatment, in addition to hot fomentations, atropin should be used, with complete rest of both eyes and protection from light. In the few cases in which the tension is increased, atropin should be used only with caution and where the patient can be kept under close observation. Eserin may be used, tentatively, in such cases; sometimes it is beneficial but it often tends to increase the irritation. The general treatment is of prime importance. The cause must be sought. Strict dieting, both as to quantity and quality, must be secured; in cases of alcoholic excess, abstention is essential; beer and wines must be forbidden. For the relief of constipation, regular doses of mercurial pill are in order. The dilution and washing out of the fluids of the body, by the drinking of large amounts of hot or cold water, is highly desirable. This is especially valuable in the cases of those who suffer from defective circulation. Some cases do well with regular doses of mercury but, as a rule, they do equally well without it.

The "Full Correction" Treatment of Myopia.

E. CLARKE. *The Ophthalmoscope* (London), 1 January, 1905.

Dr. Clarke presents a record of his experience, extending over twenty years, of the full correction of myopia and compound, myopic astigmatism. According to his method of treatment, the amount of the ametropia is estimated while the eye in question is in a condition of entire cycloplegia; he uses, for the production of this, atropin in the case of persons less than twenty years old, homatropin for others. Having estimated the degree of myopia, he prescribes its total correction and advises that such correcting glass be worn constantly. All the astigmatism is corrected, but, in cases in which the myopia amounts to seven or eight dioptries, he does not prescribe cylinders of less than one dioptre in strength, unless they improve vision. In many cases of high grade myopia, patients at first decline to have its full amount corrected but, with that exception, he would never reduce the strength of the spheric lens, even for near work. To illustrate the results of his method of treatment, he has taken cases from his private case-record note books for a period of ten years. He has excluded all cases in which the patients were more than forty years old; those who had disease or the result of disease, such as cataract or corneal nebulae (except where the disease was directly attributable to the myopia); cases of monocular myopia; or simple, myopic astigmatism, or myopia of less than 0.75 D.

The remaining cases numbered 1,129; a further reduction was made by the exclusion of those patients who had been under observation less than two years; which left 532 patients to be considered. The average duration of his observation of these cases was four and a quarter years; some

had been seen but two years, while others had been watched ten years. Of these 532 cases, the myopia, which ranged from 0.75 D to 20.0 D, remained, or became, stationery in 469 and, of these, the acuteness of vision improved in 162 cases.

In the remaining 63 cases the myopia progressed but, in 47 of them, the increase, observed during an average period of four and a half years, was but one dioptre, or less; in 13, observed for the same length of time, the increase was between one and two dioptres and it was only in the remaining three cases that the increase reached its maximum, of four dioptres.

Excluding those whose maximum increase, during four years, was one dioptre, it is found that only 16 patients, of 532, had any increase worthy of mention; and, if it be considered that a maximum increase of two dioptres, over four years, is not serious, there are left but three cases, or .56 per cent. that had any serious increase; even in these, the maximum was but 4 D.

There seems no doubt that, by this full correction, convergence strain is lessened and the ciliary muscle made to perform its proper work. The author expresses a firm conviction that it is not only excessive convergence, but excess of convergence over accommodation, which causes progressive myopia.

Of the cases reported in this article, those which showed active fundus changes were taken out of school, all near work was forbidden, they were sent to the country when that was possible but, in all cases, the *fully correcting glasses were ordered to be worn constantly*. In not one of the cases did the question of discission arise. Dr. Clarke feels sure that if this method of treatment were generally adopted, especially in the young, progressive myopia would become rarer and rarer and a myopia of 20 dioptres would, after some years, be almost unknown.

The Practical Application and the Relative Value of the Tests Used in Examining the Eye Muscles.

A. DUANE. *The Ophthalmoscope, (London), March 1, 1905.*

Tests objects, in order to insure their accurate fixation, should be sharply defined, well separated from their surroundings and just large enough to be distinctly visible. In order to eliminate the element of projection, they should be placed on a large, blank surface. In order to prevent the patient's involuntary tendency to fuse the double images produced, the test objects should be round dots or spots, rather than a figure composed of vertical or horizontal lines. He uses a small, sharp, very bright light, against a large, dead-black background, or a fairly large, round target with a round bull's eye—the latter being big enough to be visible at the given distance.

There are enumerated fifteen kinds of tests, of which six are static; the others dynamic. The static class is subdivided into two, one of which, the test for binocular fixation has but one member, the screen test. The other five are tests of binocular vision. The dynamic tests, or those which determine the ability of the eyes to move, are subdivided into five classes.

One of the most interesting points in Dr. Duane's article is the importance he ascribes to that simplest, the screen, test. In using it he places the patient with his head straight, his eyes in the primary position and directed straight toward the test-object (target). He then passes a card from in front of the one eye till it is before the other and, standing somewhat at one side, notices if either moves when covered (movement of deviation) or resumes its natural position when uncovered (movement of redress). If any such movement be detected, prisms are placed before one eye, their strength being rapidly increased until not only is the original movement abolished, but there is a slight motion in the opposite direction. By deducting two degrees from the strength of the prism that produces a barely perceptible, contrary movement, the deviation is pretty exactly obtained. If there be no screen deviation, at the outset, it is usually to be assumed that no heterophoria greater than one degree or, at most, two degrees, exists. In such a case he places a prism of two degrees, before the eye, first with its base to the nasal side, then with the base at the temporal side. If, now, the abducting prism (base nasal) produces slight, but perceptible, movement *in*, behind the screen and a movement *out* is produced, behind the screen, by the same prism used as an adducting one, either orthophoria, or a very faint degree of heterophoria, is present.

In cases of paralysis, and often also in cases of squint, it becomes important to determine the relative amount of the primary and of the secondary deviation. To do this, he first measures the screen deviation, in the way just outlined, with the prism placed before the right eye, and, then carefully keeping the patient's head and eyes in the original position, measures the deviation by a prism placed before the left eye. One measurement will indicate the primary, the other the secondary, deviation.

Having made the screen-test, in the way above mentioned, by alternate covering, he then proceeds to determine by it whether the deviation that has been found is a squint or heterophoria.

To do this, he makes the patient look, with both eyes open, at the test-object, then suddenly places the screen before one eye, say the right, then suddenly removes it. If, when he covers the right eye, and again when he uncovers it, that eye alone moves, showing that this eye deviates when covered, but returns to fixation when uncovered, and that the other eye, which is uncovered all the time, remains in the position of fixation, the case is evidently one of heterophoria. If, under the same conditions, neither eye moves (and yet alternate covering has shown us that there is a well-marked deviation) the right eye is squinting. If both eyes move, the left eye is squinting.

Passing over the tests (red glass, stereoscope, amblyscope, and bar-reading) which determine whether binocular vision is present at all or not, he next describes the *parallax test*. This is conducted simultaneously with the screen-test, i. e., as we are watching the patient's eye to ascertain how it deviates behind the screen, we ask the patient to tell us how the object looked at, moves, as the screen is transferred from eye to eye. The recognition of this parallaxic movement is really a recognition of diplopia; only, instead of the double image being seen simultaneously,

they are seen in succession. Thus, suppose the eyes deviate *in* when screened. Now, when the screen is passed from the right eye to the left, the right eye, which is, so to speak, caught in the act of deviating inward, sees the object, not straight ahead, as the left eye (which was fixing) saw it, but off to the right, i. e., the object appears to him to have made a jump from left to right. This condition, which is strictly analogous to homonymous diplopia, is properly called an *homonymous parallax*. So, too, if the right eye was turned out behind the screen, the object, when the right eye is uncovered, would appear to move to the left (crossed parallax); if the right eye was higher the object would appear to move down (right parallax); if the right eye was lower, the object would appear to move up (left parallax).

The parallax movement is measured by means of the prism that just abolishes the movement. The test is a very delicate one since, as can readily be proved by experiment, a prism of even one quarter degree will produce a well-marked parallax movement, and deviations of this amount can readily be measured by the test.

The parallax test is particularly valuable, because affording, better than any other subjective test, a comparison between the relations of the eyes as regards binocular vision and their relations as regards binocular fixation. For, unlike the other subjective tests, it is made at the same time and under the same conditions as the test for binocular fixation (the screen test). If, then, there is a discrepancy between the findings of the screen test and the parallax—if, for example, the in-and-out jump of the eyes, which we observe, is corrected by a prism of 12 degrees, while the parallax movement of the object, that the patient perceives, is corrected by a prism of four degrees—we can be sure that there is a real retinal incongruence of this amount, i. e., that the amount by which the eyes depart from binocular fixation differs to this extent from the amount by which they depart from binocular vision. This could not be unhesitatingly predicted if we had found the same difference between the findings of the screen test and phorometer—tests that are made at different times and under somewhat different conditions.

Renal Retinitis in a Child of Six-and-a-half, With Interstitial Nephritis.

HOBHOUSE. *The Ophthalmoscope* (London), 1 April, 1905.

The chief points of interest in this case were that the early symptoms suggested cerebral rather than renal mischief, the fits resembling those due to a pontine lesion; that the haemorrhage seemed to be a relief to the kidneys, the flow of urine increasing during its continuance; and that the ocular symptoms were severe. In other respects the case resembles others of the same kind; the cause was probably scarlet fever; there was no evidence of congenital syphilis; nor was there anything to explain the rapid course of the disease. The only point in the family history was the presence of tuberculosis on both sides.

B. B. aet. six and one-half years. At three years of age she had sore throat, which mother believes was scarlet fever, followed by some swelling of feet and legs; otherwise was healthy until four months ago, although

not strong. Then was sick in school, and has suffered since from headache and sickness occasionally. On November 23, 1904, at 3 a. m., she had convulsions, and was admitted to the Alexandra Hospital the same day.

On admission. A delicate, refined-looking child, thin but fairly well developed, somewhat collapsed, dull and drowsy. Teeth carious, but not notched. Two hours later, she was very sick, and remained so for some hours, quite irrespective of food. She was quite conscious, but did not speak; no paralysis or rigidity; no headache; abdomen very retracted.

Progress and Treatment. On November 25th, at 8.30 p. m., she was suddenly seized with convulsions. The spasms were limited to the right arm at first for about fifteen minutes; then, after ten minutes' remission, the right arm and left face began twitching, and, shortly after, the right leg. This lasted intermittently till four o'clock in the morning, with somewhat stertorous breathing. Chloral and bromide were given by the rectum. Urine was 1.030, alkaline, with a small amount of albumin, but no casts. On November 27th, the eyes were examined, and a suspicion of renal retinitis noted. On December 3d, the eyes were re-examined, and some soft, white patches seen in the fundus; no haemorrhages. General condition about the same; quite conscious, but dull; no more vomiting. On December 20th, blood was noticed in the urine, which was not smoky but port wine color; no casts could be found. The urine, which had been about 25 to 30 ounces, rose to between 40 and 50 ounces, and remained at that level till January 6th, when it gradually sank until death, on January 20th. The blood persisted until January 10th, and then disappeared. No casts could be discovered until the urine was centrifugalised, when a small number of hyaline casts were found, with a moderate number of erythrocytes and leucocytes. The renal retinitis on January 10th, was of the most typical character. In both eyes there were numerous haemorrhages, large white patches, and many small, glistening white dots, very extensive areas of both fundi being involved. The discs were moderately swollen. Owing to the child's mental drowsiness it was not thought advisable to test the vision. The child became gradually exhausted, and died on January 20th of simple asthenia, just about two months from her admission, and the date when the renal retinitis was commencing. She had no return of convulsions nor coma.

Post-Mortem Examination. There was practically no sign of disease in the body except in the kidneys, of which the left was exceedingly small, weighing about one-half ounce. The right weighed $2\frac{3}{4}$ ounces, and was a good deal puckered. Dr. Bushnell, Pathologist to the Sussex County Hospital, who examined them, reported that they were probably secondary to a "mottled" kidney, caused by a former acute or sub-acute nephritis. The brunt of the lesion had fallen upon the glomeruli, which were the seat of proliferation of epithelium, of capsulitis, and a hyaline change. The arterioles were thickened. There were no gummata. No cerebral lesions. The naked eye and histologic characters favored a secondary rather than a primary interstitial nephritis.

ALBANY MEDICAL ANNALS

Original Communications

SOME CONDITIONS HAVING AS SYMPTOMS PAIN AND TENDERNESS IN THE RIGHT ILIAC REGION.

The Vice-President's Address to the Medical Society of the County of Albany, Delivered at the Semi-Annual Meeting, October 10, 1905.

By JOHN F. MCGARRAHAN, M. D.,

Cohoes, N. Y.

Mr. President, and Members of the Albany County Medical Society:

Gentlemen:—In appearing before you, as Vice-President of this honorable body, gratitude first demands an expression of appreciation, for the high favor conferred upon "one of the least of its brethren," by the Albany County Medical Society. That the honor of having been one of its officers shall always be a proud memory, you can rest assured, and for the great satisfaction, I now thank you sincerely.

One of the most important duties connected with this office, is the reading of a paper on some medical subject at the semi-annual meeting, and the selection of a subject which will be of interest to the society, as well as in the limits of a general practitioner's abilities, presents, you may be sure, no little difficulty. The time and means for original scientific investigation by a general practitioner are limited, and necessitates an article on some subject which appeals to him as a result of practical experience worthy of more than passing consideration. For this paper, the subject is "Some Conditions Having as Symptoms, Pain and Tenderness in the Right Iliac Region."

Pain referred to the right iliac region immediately suggests to most men the possibility of disease of the vermiform appendix. An inflamed condition of that organ exists in a vast majority of

these cases, as operations for appendicitis, and the number of diseased appendices found in the course of operative work for other conditions, prove very positively. Such a knowledge is apt to prejudice the average observer, with the result that many diagnoses are made which operation proves to be wrong. This is more apt to occur in acute conditions associated with pain, vomiting, elevation of temperature, rapid pulse and peritoneal, or seeming peritoneal involvement, when the patient's general condition impresses one with the necessity for prompt and most efficient treatment. To those who believe in early operation the responsibility is an urgent one, and the well-known extreme conditions found in appendicitis, sometimes after only a few hours of the disease, tends to cause them to decide quickly. That the man who does not believe in operations on such early cases, and who gets a recovery without, is just as apt to err in diagnosis in many patients who recover without such procedure, we all must admit.

Even when a case presents the so-called "classical symptoms" of a certain disease, any diagnosis, unless by careful exclusion of all other diseases, is hardly justifiable. On the other hand, particularly in acute abdominal conditions, as in some of the types presented in this paper, exactness in reaching diagnosis, sometimes necessitates such lengthy investigation that the patient's life may be jeopardized by the delay.

In conditions of pain associated with some general systemic disturbance, the tendency to blame it all on the appendix is far too common, while it often is very convenient. Where a general peritonitis exists as a prompt sequel of some indistinctly localized pain, our duty is clear; prompt surgical intervention is the only treatment, and the diagnosis of the primary lesion is reached by the exploration. This did not solve the problem in the following case, where an acute exacerbation of the condition, diagnosed as appendicitis, was operated upon, but as an eliminating factor, it was most decisive. The patient, a young woman twenty-two years of age, a robust type, came to my office with a history of severe pain in the abdomen, and repeated attacks of vomiting, lasting over a period of about thirty-six hours. Walking gave considerable distress, the slightest jarring of the body giving increased pain in the right iliac region. Pulse, 114; temperature, 100 $\frac{3}{8}$ °. Examination of the abdomen showed marked tenderness from the level of the crest of the ilium to the umbilicus and ex-

tending to Poupart's ligament. The abdominal wall was rigid and the greatest intensity of pain was over McBurney's point. No history of previous illness, menstrual disturbance, indigestion or constipation. Appendicitis suspected, she was sent home and to bed, advising ice-bag locally and very limited liquid diet. During the afternoon pain became very severe and morphia hypodermatically became necessary. The general course of the disease was much like that of a catarrhal appendicitis. Palpation was not satisfactory, as the patient showed marked hyperæsthesia and manipulation was met with great resistance of abdominal muscles. In eight or nine days the patient had improved sufficiently to be allowed soft diet, and on the eleventh day patient was allowed to sit up in a chair. At this time pulse and temperature were normal and there was only slight tenderness on deep palpation. On the twelfth day, about noon, the patient was taken with severe abdominal pains again, a temperature rise to 101° F.; pulse, 120, and all her former symptoms exaggerated, pain and tenderness extreme, and several attacks of vomiting. Operation had been talked during the first attack, when it was decided if conditions seemed to demand to operate. Waiting for worse conditions did not seem warranted, so concluded to operate, which was done that night. To my surprise the peritoneum was only slightly injected, no exudate, and the appendix showed only a few slight constrictions, certainly not enough to account for symptoms we had been having. Examination of pelvic organs was negative, as was also the gall-bladder. There was some dilatation of the coecum. Appendix was removed. The patient did well and we were congratulating ourselves, when on the twenty-first day, after being about the house for four or five days, she developed pain in the right lumbar region and in a few hours was suffering so much as to require morphia. This pain radiated somewhat into the iliac region, but not so far as in previous attacks. Tenderness over the right kidney well defined and palpation gave sense of enlarged kidney. Next day the urine showed a great quantity of pus and a slight amount of blood. A diagnosis of pyelo-nephritis, with probably stone in kidney was the new diagnosis.

Further questioning revealed the fact that patient often had dull pain in back, after much exertion and always considered it the result of overwork.

The one thing very noticeable in this case was the extreme

hyperæsthesia of skin over the iliac region. This was probably due to irritation from the kidney, through the sympathetic nerves, to the lower dorsal segment of the spinal cord and then referred along the lower intercostals to their termination. The application of an ice bag acting as a local anæsthetic should eliminate to a great extent this hyperæsthesia. In this case it did not help any.

This patient's urine was examined before the operation and was pronounced normal. The absence of pus is probably accounted for by temporary blocking of the ureter. Repeated examinations of the urine in right sided conditions presenting any uncertainty, will likely give great satisfaction in an occasional case.

The next case was that of a young woman who, when first seen, had been ailing for four or five days with headache, anorexia and general weakness, with some increase in severity of headache and general symptoms at night. Temperature never above 101° in the morning, with pulse of 90 to 108. There was some tympanitis. The urine was normal. No roseola. Suspected at first typhoid fever, but as the temperature and pulse became normal in about a week, on improvement in very rank odor to stools, concluded the case was one of auto-intoxication from intestinal putrefaction. There was never a complaint of abdominal pain or any tenderness on palpation; patient's menses always regular and normal. She remained very weak after this attack and her appetite, which she had regained, again failed her and her folks, to whom typhoid fever was not a stranger, began to fear that she was going to develop that disease and had intended having her seen again. About ten days from time I last called on her, while at stool, she was suddenly seized with agonizing pain referred to the right lower abdomen, and a feeling of extreme faintness. She was seen within one hour. There was considerable shock, patient very restless and complained bitterly of pain in abdomen. Morphia was given to quiet and after she became easy, abdomen was examined. Tenderness marked over whole lower abdomen, most marked on right side over lower iliac region. There was marked rigidity of abdominal walls. Vaginal examination was refused. Rectal examination gave feeling of some thickening in pelvis, but on account of inability to make bi-manual palpation, owing to tenderness of abdominal wall nothing definite could be learned. Temperature, 100° ; pulse, 110, small and compressible. Was it a typhoid perforation or a severe appendi-

citis? That some very serious lesion existed seemed certain, and either of these two conditions seemed most likely. An ice-bag was placed over right abdomen and in five hours I saw patient again. Abdomen rigid and marked distention. Pulse, 120; temperature, 99°; face anxious, considerable nausea, but pain not so severe. Diagnosis, septic peritonitis. Had her removed to the hospital and operated; opening over the region of the appendix. Pus flowed freely as soon as the peritoneum was incised. The intestines were intact. The appendix, which was practically a very thin fibrous cord and of unusual length, showed no inflammatory disturbance. In the pelvis was found a ruptured ovarian abscess, the sac of about eight ounces capacity. Ovariectomy, with liberal drainage, was employed. The patient made a good recovery.

The third case presented some symptoms common to both previous ones. A girl, twenty-one years of age, came to the hospital with a history of having sudden severe pain develop in right side twenty-four hours before admission. There was a history of induced abortion some time before and a vaginal discharge somewhat purulent in character. Examination of the abdomen showed rigidity with marked tenderness over right iliac and hypogastric regions. There was some feeling of fullness over region of the appendix. Vaginal examination showed considerable thickening in right pelvis. Pain of severe type came in waves, she vomited frequently, had repeated chills, and general symptoms of septic infection. Diagnosis favored appendicitis. Operation, incision over appendix. The omentum adherent, and was included in a mass extending from coecum well into pelvis. Separation of adhesion showed a gangrenous appendix in a very offensive pus cavity. There were four perforations of appendix and a gangrenous patch of coecum the size of a quarter. The tip of the appendix lay down in the pelvis attached to the posterior surface of the ovary. Appendix removed and a patch in coecum inverted. Liberal drainage of cavity. On the fifth day pain was complained of high up in the lumbar region on the right side posteriorly and some tenderness was found on pressure over the right kidney. Urine was negative. The pain which continued to give considerable trouble was increased by deep respiration, or by pressure. The patient developed a slight cough; but nothing found on chest examination. After the twenty-eighth day the temperature became irregular and the patient seemed to be

losing ground. That pus was present seemed certain and exploration with aspirating needle in the eleventh intercostal space posteriorly gave pus. The patient was operated upon, a portion of the eleventh rib excised, a free opening made into a pus cavity, containing much broken down tissue, and lying beneath and behind the liver, in retroperitoneal space. There was a fecal discharge from this opening on the third day. Under drainage, the wound healed and patient made a good recovery.

There are a number of other conditions giving symptoms referred to this region, among which is the pain of a right sided pleurisy, as in one case where the patient complained of pain on coughing or exertion, in the abdominal wall, laterally and in the iliac region, the persistence of which gave him much more anxiety than his cough and caused him to seek medical advice. The presence of rapid pulse, several degrees of temperature, with loss of flesh, and general weakness, with a distressing hacking cough gave strong suspicion of some lung condition, but did not associate the seeming muscular condition with the chest symptoms. An effusion was found beginning in the right pleural cavity, and as the liquid increased, the pain in abdominal wall lessened, probably due to fact that the parietal pleura and the visceral layer no longer rubbed together and transmission of the irritation through the intercostals no longer occurred.

The vague symptoms, sometimes referred to the iliac region, complained of as a pain or feeling of distress, with some sensitiveness especially when fatigued, and found in incomplete inguinal hernia, may affect either side, but will bear remembrance, particularly in looking up the various possible causes of trouble in right side. The symptoms are probably caused by pressure irritation of the first lumbar nerve through the ilio-inguinal nerve.

With such conditions as those mentioned, as well as renal colic, typhoid perforations, diseased uterine appendages and the like, any of which may show all kinds of modification in the symptoms which they present, as compared with those which study has led us to expect, errors are bound to be made, even by the most painstaking, but only the indifferent observer will find that the same mistakes repeat.

END RESULTS IN SURGERY OF THE KIDNEY,
BASED ON A STUDY OF NINETY CASES, WITH
123 OPERATIONS.

Read by Abstract, Fifteen Minutes, and Closing the Discussion, Five Minutes, at the Meeting of the American Surgical Association, San Francisco, California, July 5, 1905.

By ALBERT VANDER VEER, M. D.,

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(Concluded from September ANNALS, page 598.)

I have been greatly impressed with the study of tuberculosis of the kidney, as to invasion from below, or by systemic infection. It is to be noted that these patients complain of other symptoms than the real kidney lesion itself, that is, they often have bladder complications, and later, not receiving benefit from treatment, it dawns upon the physician as a possible lesion of the kidney, the diagnosis of tubercular trouble at last being reached.

There were seven of these cases, as follows:

Male, right side, 1 recovered.

Male, left side, 2 recovered.

Female, right side, 1 recovered.

Female, left side, 3 recovered.

Mrs. A. L., aet. 48, admitted March 30, 1893. Diagnosis pyonephrosis, right. Very good family history. Has had five children; three miscarriages. Fall of 1889 noticed enlargement in right side, with pain from posterior crest of ileum to groin and round ligament. Same attacks previous year and morphine necessary to control pain. Hot packs afforded some relief. Urine contained large amount thick mucoid deposits, with much pus. Nephrectomy revealed well marked tubercular kidney. Good recovery and in excellent health eight years after operation.

This case illustrates the possibility of curing this trouble if diagnosis is made early and operation done promptly.

Mr. H. F., aet. 52, admitted February 26, 1897. Diagnosis tubercular kidney, right side. Family and personal history negative. Patient had gonorrhoea four years ago; right testicle enlarged; a year ago had an attack of intestinal colic; then following exposure to cold passed blood in urine for several days. Left work, cigarmaker, two months, then returned for four months. June, 1896, another attack; no colic; cathe-

terized, with pain for three or four days. Passes blood in urine whenever nervous. November, passed pieces of tissue and clotted blood, with severe pain previous to and during passage through urethra. Swelling in right side larger before attacks, decreasing with flow of urine. Latter examined each day after admission to hospital; albumin always abundant; occasional casts; urea normal.

Nephrectomy, and while recovery was rather slow, he had improved decidedly when discharged, and has remained in good health since.

Mrs. E. M., aet. 64, admitted October 25, 1898. No tubercular or cancerous trouble in family. Present trouble began one year ago, following a strain. September, 1898, had a chill, followed by fever, with severe pain in back and enlargement over left kidney. Large amount of pus removed by aspiration. Nephrotomy October 4, a quantity of pus withdrawn, and drainage tube inserted. Patient recovered nicely, but drainage continued, and nephrectomy revealed a tubercular kidney. Excellent recovery and in good health at present time.

Mr. T. F., aet. 29, admitted March 22, 1899. Diagnosis, sinus following abscess of left kidney, which was curetted November, 1898. Discharge of pus constant, though not great, requiring much attention. No pain; bowels regular; appetite good; urine clear and normal. Five years ago had malarial fever followed by pain over left kidney, radiating down groin; urine milky; some pain in left testicle.

Nephrectomy. Kidney pale and containing numerous pus cavities. Clamps; good recovery. Laboratory report, tuberculosis of kidney.

Mrs. E. S., aet. 35, admitted September 18, 1900. Diagnosis tuberculosis of left kidney. Much pain in left side; retention of urine, with leucorrhoea. Trouble began four years ago, when she urinated every ten minutes, accompanied with much pain across kidneys. Bladder washed out but no improvement followed and discontinued. Ten months ago had abscess in left side, which discharged pus for several days. Has recently had chills, followed by high fever. Fluctuating tumor found on examination, size of cocoanut, and very tender on pressure. Urine, 1010, acid, no sugar, small amount of albumin, much pus and amorphous urates, but no tubercle bacilli found. Nephrectomy. Patient made a good recovery and has remained well since. Diagnosis confirmed by laboratory report.

Miss M. F., aet. 30, admitted July 27, 1901. Diagnosis pyonephrosis, left side.

Past history negative, although patient never very strong. Two years ago had an attack of vomiting; bowels constipated; bladder irritation; many attacks of sudden, localized pain, gradually increasing in severity and frequency. Slight thick vaginal discharge. Patient poorly nourished; somewhat under developed; skin and mucous membrane pale; pulse poor in volume and tension; artery walls soft. Urine 1010 to 1028, and at times quite numerous pus cells. Diagnosis of possible

tuberculosis also made. Usual nephrectomy; good recovery. Laboratory report showed tubercular kidney, probably of blood origin, and due to lodgment of tubercular embolus. November, 1901, sinus not closed. Slight discharge, somewhat purulent in character, had continued since operation, but ceased immediately after removal of silk ligature knot and patient now in fine condition.

There was a total of eight cases of malignant growths, as follows:

Sarcoma.

Male, right side, 2 recovered; 1 dead.

Male, left side, 1 recovered; 1 dead.

Female, right side, 1 recovered.

Female, left side, 1 dead.

Carcinoma.

Female, right side, 1 recovered.

Hypernephroma—

Male, left side, 1 recovered.

These cases present some rather interesting phases.

Mrs. D. C., aet. 47, admitted September 12, 1895. Diagnosis, sarcoma left kidney. Patient well up to one year ago, when there was an enlargement in left side; pain in voiding urine; persistent vomiting; emaciation. Tumor gradually increased, filling entire left lumbar region, right of median line, up under border of left ribs, and patient very ill. Mass felt elastic, as though fluid present contained in a thick sac; distinct resonance in lumbar region near spine. Albumin in urine; some pus; hyaline and granular casts.

Incision in left lineæ semilunaris, and tumor removed, weighing 26 ounces. Patient greatly shocked, but rallied well; however, only 2 ounces of urine obtained by catheterization, and death from exhaustion 24 hours later.

Autopsy: Interstitial nephritis, right kidney; sarcoma, left kidney.

Mr. E. A. P., aet. 57, admitted May 6, 1895. Diagnosis, hydronephrosis, associated with sarcoma, right kidney. Family history nephritic. In 1890 patient passed gravel, with some pain, and a large mass felt in right side, with a sensation of pressure. Lately increase of urine, but otherwise negative. Aspiration May 4. Nephrectomy attempted May 8, but large cyst attached to right kidney, sarcomatous in character, dangerously near ascending vena cava and renal vein, and impossible to remove kidney *en masse*. Large portion removed, however, and clamps applied. Patient did not rally well and died May 12.

Master E. H., aet. 4½ years, admitted September 5, 1900. Diagnosis, embryonal adeno-sarcoma, right kidney. Family history negative. Patient always well as a child. Six months ago passed several clots of blood in urine; has severe eructations of gas. A few days ago first noticed small

lump in right side, which has grown larger since. No chills or fever, nausea or vomiting; bowels fairly regular at present, but previously constipated; not confined to bed. Heart and lungs negative; movable tumor in right side; tense, fluctuating, not painful, size of closed fist. Urine cloudy, amber 1,020, acid, no sugar, small amount of albumin, amorphous urates, and a few granular and hyaline casts. Nephrectomy difficult. Mass removed; sarcoma. Patient made a good recovery, but died six months afterward from a return of the disease.

There was one well marked case of carcinoma, as follows:

Mrs. L. K. B., aet. 62, admitted January 7, 1901. Diagnosis, carcinoma, right kidney. Family history negative. In September, 1900, patient had severe pain in right side with tumor in appendiceal region; later stomachic distress, with vomiting, loss of appetite, etc. Lost 30 pounds in weight in nine months, with constipation and occasional emesis. Pain in region of tumor intermittent, patient anaemic; arterio-sclerosis; tumor, apparently implicating appendix, size of a cocoanut, tender and painful on pressure. Operation; large quantity of broken down tissue removed, composed of remains of kidney, with multiple adhesions involving contents of peritoneal cavity. Appendix not recognized. Irrigation; drainage; good recovery. Growth returned in six months and patient died within a year after the operation.

The following case is rather interesting:

Mr. G. W., aet. 35, admitted May 17, 1905. Diagnosis, hydronephrosis, left kidney. Family and personal history negative. Five weeks ago seized with severe pain in left lumbar region; no vomiting or constipation, or urinary complications noted. Attack lasted three days. One week ago noticed tumor which has increased greatly since. Urine contained albumin, casts, epithelium, otherwise negative. Hemoglobin 85 per cent.; red cells 4,400,000; white, 9,000. Protuberant mass fills left side completely; size of football; dull on percussion over entire mass. Operation through left lineæ semilunaris; tumor exposed colon pushed to median line; aspiration with large needle negative. Incision in tumor and about 1,500 cubic centimetres of brain-like substance scooped out. Nephrectomy, tumor springing from superior pole of kidney. Small incision in left lumbar region for rubber drainage. Urine, June 6, normal, and patient discharged June 7, recovered.

Pathological report from Dr. Pearce: "Adrenal tumor, implicating kidney, together with extensive central necrosis, softening and hemorrhage; with calcification and bone formation in the capsule."

I have watched these cases with particular interest, as it will be observed that the mortality list among malignant growths of the kidney is quite serious. I have an impression that sarcoma in children is very rapid in its development; that very few cases admit of an operation, and when one is

done a very small percentage recover. This has been my experience in reviewing a number of cases seen in consultation, during my years of surgical work. In adults, however, this observation apparently does not hold so good.

Of decapsulation of the kidney for nephritis there were two cases.

Mr. H. H., aet. 29, admitted January 26, 1904. Diagnosis, interstitial Bright's disease. Family history negative. Patient had specific urethritis in 1899, lasting for two years. Informed that he also had pyelitis. Since then has had pain in right side, running down to testicle. Six months ago had a severe attack of pain following gymnastic exercises, with intermittent attacks since. Urine at present at times shows large quantities of amorphous urates, hyaline casts and albumin. Operation February 4, following a careful course of medical treatment. Both kidneys found small, right not movable. Aspiration negative. Capsules freely incised and stripped from surface. Uneventful recovery and April, 1905, patient enjoying the best of health, having gained 30 pounds. The urine improved markedly after the operation.

Mrs. C. E. K., aet. 24, admitted July 29, 1904. Diagnosis, parenchymatous nephritis. Family and past history negative. Present trouble began about one year ago, with usual symptoms. Urine contained albumin, $4\frac{1}{2}$ per cent., a few red cells, but otherwise negative. White blood count, 12,580. Patient discharged.

August 22, much improvement following medical treatment. Readmitted January 22, 1905, with more marked symptoms, urine now containing hyaline and granular casts. In consultation, decapsulation of both kidneys advised, and performed February 13. Right kidney lobulated, cortex hemorrhagic, soft and flabby. Aspiration negative. Kidney size of two fists. Left side showed kidney somewhat contracted, otherwise practically normal. Urine before operation 30 ounces daily; after, 46 ounces. Patient discharged much improved. May 28, 1905, she reported an increased amount of urine, and bettered in constituents; physical condition excellent. Former headaches and mental symptoms have abated, but she tires easily after much exertion. Pregnant three months' uterus emptied, cervix repaired, and good recovery.

Of traumatisms and injuries of the kidney the group comprises six, as follows:

Mr. B. B., aet. 23, admitted August 6, 1888. Pistol wound, 22 calibre, in left lumbar region, ball passing completely through body. Entered hospital in a state of collapse; frequent desire to urinate; urine bloody, and he presented all the symptoms of a wound of the kidney. Absolute quiet maintained. Patient rallied quickly from the shock, next morning urine contained less blood, he gradually improved, and was discharged two weeks later, the urine then normal. In 1893 patient in excellent health.

Mr. J. W., aet. 19, admitted October 12, 1900. Pistol wound, 38 calibre, of left hypogastric region. After a delay of 12 hours in getting the consent of his family, a section was done. Left kidney had sustained a stellated fracture, hemorrhage had been free, and into the retroperitoneal space, with some clots in peritoneal cavity. Renal artery wounded at pelvis. Nephrectomy, but patient died 24 hours later.

This patient passed little blood in urine. The laceration of the pelvis of the kidney evidently destroyed the continuity of the ureter, and he should have been operated upon at once, the delay making the case hopeless.

Mr. B. R., aet. 40, admitted November 6, 1897. Diagnosis, pyonephrosis, left side.

Family and past history negative. September 19 patient stepped off curbstone, striking heavily on left foot, followed by sudden pain in region of left kidney, which continued for several days. Large tumor presented in region of left kidney, yielding 16 ounces of pus on aspiration. One week later nephrotomy, with drainage, latter continuing up to present time. Medical treatment, irrigation of sinus, and patient improved. Entered hospital February 14, 1901, in excellent condition for nephrectomy. For past four years had suffered in no wise save for frequent dressing of the sinus remaining from former nephrotomy. When peroxide of hydrogen was introduced into sinus, which still persisted, it would produce a severe cough, and his condition would become alarming for a few moments, giving evidence of a connection between the pleural and old abscess cavity. Usual nephrectomy, and patient left the hospital greatly improved but still has a sinus.

Mr. F. G., aet. 21, admitted March 30, 1899. Diagnosis, pyonephrosis, left side. Sustained an injury five years ago, but no flesh laceration, was confined to his bed for a month, never regaining former health, and in bed again the past month. Urine apparently normal; bowels constipated; slight tenderness over left side, with some enlargement. Considerable loss of weight for past year, with occasional night sweats. Aspiration gave several ounces of pus, followed by nephrotomy. Patient discharged May 5, in excellent condition, but with a sinus. Steady improvement, with intermittent closure of sinus, followed by new abscesses, up to May 15, 1902, when he re-entered the hospital for a nephrectomy. Usual operation attempted, with excision of sinus, but in following out pus cavity, I found it extended a little beyond the median line, and implicated the left pole of a horseshoe kidney. Removal up to point of separation, and cavity packed. Good result, with complete closure for about three months, when another abscess formed. Drainage once more established, and uninterrupted improvement, until September, 1903, when there was another relapse, but urine in excellent condition. October 6, 1903, sinus opened up, curetted and packed. From this time on there was rapid improvement, only a small sinus now remaining and cavity apparently completely filled in. The right pole of the kidney is doing its work thoroughly and urine entirely normal.

Mr. H. B., aet. 32, admitted June 21, 1904. Diagnosis, movable right kidney, following traumatism. Accident occurred three years ago while wrestling, followed by intermittent dark urine and some distress in back over right kidney, together with nausea and vomiting, more pronounced of late. Urine practically normal, save for a few casts. Usual nephrorrhaphy, with good recovery, and patient well at present time.

Mrs. G. G., aet. 46, seen in consultation June 16, 1903. In stooping over suddenly seized with violent pain in right side, nausea and vomiting. Marked fullness in lumbar region. Urine diminished in quantity, with slight amount of albumin, otherwise negative. Hot applications employed, and during next 12 hours tumor subsided, urine gradually increased, becoming normal, and patient made a good recovery in a few days without operative intervention. I considered this a case of acute displacement of the kidney.

Of cases of renal nephralgia, associated with suspected stone in the kidney, I was not able to confirm my diagnosis in all instances by exposure of the organ, as the six cases herewith presented illustrate. In only one was the diagnosis of stone confirmed by exposure of the kidney.

Mrs. C. C., aet. 60, operation done at her home. Patient gave a history of pain in right side, and at times well marked renal colic, with albumin and pus in urine. There was a well defined tumor in right lumbar region, believed to be a condition of pyonephrosis. Kidney exposed, found to be large, white, aspirated, capsule split, but no pus or stone found. Capsule sutured to fascia and gauze packing introduced. Patient made an excellent recovery, urine improved and she was well for two years after the operation, when she died very suddenly of cerebral hemorrhage. No doubt this was a case of movable kidney.

Miss G., aet. 22, admitted October 7, 1902. Diagnosis, movable kidney, right, with suspected renal calculus. Six months ago patient had a severe attack of pain in right side, leg drawn up, pain extending to region of appendix and labia of right side, with frequent desire to urinate. Urine contained oxalate of lime, but no blood or pus. She was relieved by medical treatment, and returned to her work, trained nurse, suffering, however, more or less tenderness in that side. One month ago was seized with a second similar attack, so intense that examination for locating the kidney was impossible. Anaesthetic given and kidney explored. Attempt to examine the bladder and ureters not successful, but left kidney apparently normal. Under either limb straightened without difficulty, and kidney proved to be movable and enlarged, the macroscopical appearance so indicative of tuberculosis it was deemed best to remove it. Usual nephrectomy. Excellent recovery and other kidney doing its work well, although there is an occasional trace of albumin in urine. Pathological report stated, subacute parenchymatous nephritis, with multiple areas of necrosis. Patient has since married and in good health May, 1905.

Mr. J. H. C., age 28, admitted December 21, 1903. Diagnosis, renal colic. Specific urethritis at 26 years of age, complicated with orchitis, but good recovery. Patient drank moderately, not of late however, and careful in the use of tobacco. About seven years ago had very severe pain over region of left kidney, down course of ureter to bladder, with vomiting, then pain would leave as suddenly as its onset. These attacks occurred intermittently until past six months when he has had four severe ones. Urine acid, 1,030, crystals of oxalate of lime, and a few granular casts; bowels regular; no irritation of bladder. In consultation, diagnosis of renal calculus, and exploration advised. Kidney exposed with some difficulty, thoroughly explored but no calculus found in same, nor in ureter, nor was the kidney sufficiently movable to indicate a kink in the ureter. Capsule of kidney split, turned back for some distance, and fixation done. Wound healed kindly, and patient discharged January 22, 1904. Previous to and following discharge patient had a thorough course of medical treatment, drinking freely of soft water, taking alkalies, etc. He improved for a short time only, and readmitted February 19, 1904. There was a repetition of old symptoms, but more severe, pain not being alleviated by morphia. Old wound opened, ureter followed nearly entire distance, but was not able to detect a calculus. Kidney large, with ecchymotic spots on surface, cortical portion indicating a hemorrhagic condition, and complete nephrectomy done. Uninterrupted recovery, and in absolutely normal health since. Laboratory reported kidney hemorrhagic, but otherwise normal. Urine improved immediately after operation and has continued normal since.

Mr. A. M., aet. 23, admitted September 15, 1904. Diagnosis, neuralgia of left kidney, with possible renal calculus. Kidney exposed in usual manner, exploration with aspirating needle failed to locate stone, capsule split, wound packed with gauze, and patient made a good recovery, being in excellent health six months after operation, and free from all pain.

Of the irregular classifications there are four cases of interest, as follows:

Mr. C. A. L., aet. 23, admitted April 17, 1894. For many years patient had suffered from pain in left side. During past six months there has developed a distinct enlargement, involving the kidney. Nephrotomy done, patient made a good recovery, improved in health, and was instructed to report later if the sinus did not heal. He did so well until late in the fall that he neglected proper care and attention, and after considerable exposure, re-entered the hospital December 19, in a very serious condition, and without further operative intervention possible, died December 21, 1894.

This fully illustrates how some patients procrastinate, and even after being helped will neglect themselves until when they finally do present for further treatment they are almost beyond hope.

Another interesting case is that of Miss A. S., admitted June 6, 1898. Diagnosis, pyonephrosis, right kidney, cyst very large; aspirated and over twelve pounds of fluid pus removed; second aspiration, soon after first, eighteen pounds removed. She was advised to return to the hospital for surgical treatment, to which she consented, but failed to do so, and the case lost sight of. This is the largest amount of fluid I have ever removed from an abscess or cyst of the kidney.

Mrs. P. McD., aet. 53, admitted May 21, 1901. Diagnosis, cystic kidney, right side. About ten years ago had continuous pain in stomach, extending over entire abdomen, with nausea and vomiting quite severe at times. Appetite nil; bowels regular; urine cloudy, 1,026, acid, no sugar, albumin abundant, heavy white sediment, and a few hyaline and granular casts. Menopause three years ago. Has lost much in weight; respiration difficult, heart normal; abdominal walls very flat, tumor size of a coconut, on palpation, in right side, movable and irregular in contour. Operation through right semilunaris. Large cystic kidney, which ruptured in trying to remove it. Pedicle tied with No. 1 silk; wound closed with silkworm gut sutures. Patient made a good recovery and has remained well since. Laboratory report showed specimen one of extreme hydronephrosis, with atrophy of kidney. On leaving the hospital urine yellowish red, 1,028, acid, no sugar, mucous, sediment, squamous, epithelium, bacteria, pus cells, but no casts.

Miss J. V., admitted July 31, 1903. Diagnosis, movable kidney, left side. First, nephrorrhaphy; second, resection of kidney; third, nephrectomy. First operation did not afford relief. On exposure of kidney the second time a distinct abscess cavity could be made out in lower third of kidney, so isolated that I determined to resect and drain. Patient did well for about six weeks, then showed more marked evidence of distress, temperature and pulse. Old wound, therefore, reopened and nephrectomy done. The case proved to be one of tuberculosis. Patient had made a good recovery when last heard from. Since paper was written Miss V. has died from general tuberculosis.

Mrs. M. B., admitted November 16, 1903. Diagnosis, cholelithiasis and floating kidney, right side. For two years has suffered from occasional severe pain radiating down right ureter, with blood in urine at times. Past six months attacks more frequent and severe, and amount of blood in urine quite serious. Segregation of urine evidenced blood from right side. Four months ago had an attack of gall-bladder trouble, jaundiced, clay-colored stools, and enlargement of the gall-bladder. Cholecystotomy November 17, 1903. Large, single stone in gall-bladder. Examination of kidney presented an irregular appearing surface. Posterior wall of peritoneum split and nephrectomy done. Pedicle ligated with silk and peritoneum brought over surface. Wound closed in usual manner in such cases. Sinus in gall-bladder remained for a long time, but finally closed in an intermittent manner; however, patient in excellent health at present time, with no blood in urine since operation. Macroscopical appearance

of kidney showed a number of hemorrhagic infarctions. Pathological report: "Slight chronic pyelitis; slight chronic nephritis."

For many years my work has been largely along the lines of abdominal surgery, and I wish to speak of the following cases to illustrate errors in diagnosis:

Miss B. H., aet. 21, admitted May 1, 1890. Diagnosis, unilocular ovarian tumor. Fluctuating tumor in right side, filling pelvis and extending well up towards liver. On median incision uterus and ovaries found normal. Careful exploration proved the tumor to be a cystic kidney. Transperitoneal operation done without any great embarrassment; vessels of pedicle ligated with silk, peritoneal layers brought together, wound closed with interrupted silk sutures, and a good result followed. I saw this patient a number of times the following year and she always presented a condition of perfect health, passing a normal quantity of urine, and in every way seemed well.

Mrs. A. B., admitted May 24, 1900. Diagnosis, ovarian cyst, with possible deep fibroid in pelvis. Median incision and on exposing tumor it was found with a thickened cyst wall, and proved to be a case of pyo-hydro-nephrosis of right kidney. Patient made an excellent recovery and is well at the present time.

Out of all my abdominal work these two cases are the only ones occurring where there was an error of diagnosis between an ovarian cyst and cystic kidney.

Mrs. S. L., aet. 45, admitted January 21, 1900. Diagnosis, pyo-hydro-nephrosis, right side. Patient never had any serious illness. Was taken with severe pain in right side five days ago, with some nausea and vomiting. This continued, increasing in severity; bowels very constipated, but cathartics acted well. Pain, however, continued, there now being marked resistance and tenderness on right side, with some dullness. The case was a puzzling one as to diagnosis, there being one of three conditions to consider, i. e., gall-bladder trouble, possibly an abscess from a retroperitoneal appendix, possibly a peri-renal abscess. Oblique incision was made for the purpose of examining the kidney, abscess cavity soon reached, washed out, and drainage tube introduced, believing we had a retroperitoneal abscess to deal with, in connection with the appendix. Patient did nicely, but at the end of ten days the discharge became distinctly bilious, and she passed several gall stones, later making a good recovery.

Mrs. A. F., aet. 59, admitted September 3, 1903. Diagnosis of tumor of right kidney, uncertain. Family history negative. Present trouble began about two years ago. Patient lost 35 pounds in weight; bowels extremely constipated; no bladder intolerance; abdomen never painful. First apprised of the presence of a tumor by her physician in June, 1902. For past six months appetite has grown less and less until now she has no desire

whatever for food. Has never vomited; no attacks of pain until June, 1902, when one presented with diarrhoea. Tumor felt in right lumbar region extending beyond median line, evidently implicating right kidney. An attempt to catheterize right ureter was not successful. Median incision six centimetres long between ensiform cartilage and umbilicus. Upon opening abdomen there was an escape of a large amount of dark, serous fluid. Tumor, size of a cocoanut, found lying in right side of abdomen. On careful examination it was found to spring from right kidney, which was apparently horseshoe in form. Tumor cystic in character. Two ounces of blood aspirated from cyst. Tumor involved right lobe of liver and pyloric end of stomach, and could not be removed. Wound closed with silkworm gut sutures; one piece of iodoform gauze in lower angle. Sinus remained for some time after patient discharged, but finally closed. She made a good recovery and is in excellent health at present time. Examination of urine in this case was very negative. The case was probably one of cholecystitis.

In approaching the kidney from behind I prefer the oblique incision, such as Kelly has so beautifully illustrated in his paper on exploration of the ureter, and in fixing the kidney, catgut for capsule and fascia; silkworm gut through and through for remaining portion of skin and muscle, introducing iodoform gauze, removing the same in four or five days, and silkworm on tenth day.

The one case of hernia reported resulted from the old incision, parallel with the spine and transversely through the muscle, causing a lumbar hernia, but none of the others presented this complication.

In a review of the cases presented in this paper, one is impressed with the very excellent results following the operation of fixation of the kidney. In the hands of all operators the mortality list is exceedingly small. Wearing of a bandage, with the kidney pad, is irksome to many patients, who gladly consent to surgical intervention, when the prospects of recovery are so good.

The combined operation of nephrotomy and nephrectomy, for abscess of the kidney, is appropriate for such cases as will not bear too long an operation, and where there may be a large kidney, made up of multiple abscesses in such a way as to make manipulation of the organ very difficult. Simple drainage, however, benefits the patient for a time, and often causes a diminution of the mass to be removed later. In the purely cystic form of kidney, a true pyonephrosis, an immediate nephrectomy is proper in the majority of cases. In re-

moving a large sacculated kidney I have saved much time in introducing my fingers or hand inside the sac, drawing out, and in this manner easily separating attachments. It must be borne in mind that, following a nephrotomy or nephrostomy, a very fair number of cases recover without further intervention.

In a large pus kidney, especially with multiple abscesses, there is always some danger in nephrectomy causing an infective peritonitis.

In traumatism of the kidney, firmness and decision on the part of the surgeon are an absolute necessity. There is no other form of emergency surgery more exacting.

In cases of a movable or floating kidney, giving such marked symptoms that the surgeon is often led to believe that he has a stone to deal with, we must admit our diagnoses are very far from correct, and the cases here reported were disappointing by reason of not finding a calculus present. It is sometimes difficult to diagnose between a neuralgic kidney and one containing a calculus in its pelvis. Splitting of the capsule relieves pain in cases that can be classified only as a nephralgic condition.

It is yet a mooted question as to how much can be accomplished by resection of the kidney for relief of abscesses and growths.

The cases of tuberculosis reported indicate decidedly the importance of an early operation, and give a most encouraging outlook for these patients, regarding permanent recovery, for it is seldom both kidneys are diseased.

In incipient tuberculosis of the kidney we have yet much to accomplish in making the examination of the urine more positive in detecting the bacillus of tuberculosis. Laboratory work thus far has not aided the writer much.

Malignant growths give us our mortality list, and yet there is much hope for these cases if reached early.

Surgery of the kidney is becoming more and more exact with the splendid advances made in methods of examination of the pelvis and urine; as to the possibility of one kidney being diseased or absent.

Errors of diagnosis will occur less frequently as methods of examination become more perfect.

As to the use of ligatures or clamps if the pedicle is ex-

ceedingly short and difficult to ligate clamps are advisable. They are easily applied, and, as used in the cases reported, the results were excellent. There was no hemorrhage on removal at the end of forty-eight or seventy-two hours, and the patients convalesced rapidly. When using ligatures the writer is reluctant to dispense with fine silk.

The cases of hydronephrosis, yielding to aspiration, are of interest, the possibility of such a result, in these simple cases, should always be borne in mind, and the treatment attempted.

One cannot overlook the fact that the proportion of diseased kidneys is so much greater on the right than on the left side, and in females than in males.

A differential diagnosis between gall-bladder lesions, the kidney, the caecum and its anatomical relations, presents strongly in a paper of this kind. Surely, the right abdominal cavity is to be greatly respected by the surgeon.

It will be observed that in a total of about ninety patients there were one hundred and twenty-three operations done. This is readily accounted for because of the patients requiring more than one operation.

The percentage of mortality is exceedingly small, malignant disease and abscesses of the kidney producing the greatest number.

The writer desires to express his thanks to Drs. Blumer and Pearce and assistants of the Bender Laboratory, in examination of the specimens, with reports, also to Drs. Ward, Hun, Neuman, Wm. Faust, Haner, Campaigne, Pearson, LaMoree, Powell, Theo. Bailey, Ryan, Wentworth, Kittell, Buckbee, Jansen, Perry, Cook, Sternberg, MacFarlane, Ball, Witbeck, Mitchell, Featherstonhaugh, Boyd, Bristol, Lomax, J. M. Moore, and many others of my professional friends who have referred their cases to me.

ACTINOMYCOSIS LIMITED TO THE URINARY TRACT.

By E. MacD. STANTON, M. D.

(From the Bender Laboratory, Albany, N. Y.)

Actinomycosis limited to the urinary tract is of exceedingly rare occurrence. In a careful search of the available literature on human actinomycosis, an instance of such localization has not been found. It seems advisable therefore to record a case in which an actinomycotic lesion was limited to the kidney and bladder.

Actinomycosis involving the kidney as an incidental lesion in the pyæmic form of the disease is by no means uncommon; cases of this type having been reported by Ruhrah,¹ Mallory,² Kobler³ and others. Both the kidney and bladder may be involved by the direct extension of lesions originating in other organs, the most frequent source being the gastro-intestinal tract. Such cases have been reported by Billroth,⁴ Bell⁵ and others.

The case here reported was clinically one of cystitis and pyelonephritis. The actinomycotic character of the kidney lesion was not recognized during life or at the time of the autopsy; but was discovered only upon histological examination of the kidney. For this reason it has been impossible to definitely determine certain points which might have an important bearing on the unusual localization of the lesions.

REPORT OF CASE.

(Records of the Bender Laboratory, Autopsy No. 839.)

Clinical history. Mr. W., white, aged 53, shoemaker, admitted to St. Peter's Hospital, January 7, 1905, service of Dr. Henry Hun.

Family history. Negative.

Personal history. Always healthy. Uses alcohol to excess. Denies venereal history.

Present illness. About two months before admission to the hospital the patient began to have difficulty in passing his urine. He could pass only a small amount at one time and the stream was small. For some time before admission he had been troubled with dribbling of urine over which he had no control. The passage of urine caused a burning sensation.

Physical examination. Patient well developed. Pupils unequal, the left being irregularly dilated. Tongue enlarged, flabby, has fine tremor and

is covered with white fur. Lungs resonant. Expiratory murmur prolonged. Heart sounds rather faint but otherwise normal. Abdominal examination negative. Bladder somewhat distended. Knee jerks present.

Urinary examination. January 8th, specific gravity 1020; acid; cloudy; trace of albumen; no sugar; many leucocytes and epithelial cells. January 23rd, specific gravity 1010; acid; cloudy; many pus cells.

Blood examination. January 23rd, haemoglobin 45 per cent.; leucocytes 6000.

Sputum examination. Many encapsulated diplococci. No tubercle bacilli found.

While in the hospital the patient ran an irregular temperature ranging from 99 to 103 and was slightly irrational the greater part of the time. In addition to the bladder symptoms he had a slight cough.

The treatment was purely symptomatic and consisted of cystogen in five grain doses every four hours together with a cough mixture, bismuth subnitrate, tannigenfi, strychnine and digitalis.

Autopsy. Made by Dr. Stanton eighteen hours after death.

The body is that of a large framed, poorly nourished adult male. Length of body 167 centimeters. Rigor mortis present. No œdema. Pupils unequal. Skin of a uniform yellow color except for moderate reddish discoloration of dependent parts. On the outer aspect of the right thigh 6 centimeters below the crest of ilium is an irregular, depressed reddish scar.

Abdominal cavity. No free fluid. Serous surfaces smooth and glistening. The omentum covers the intestines, is rich in fat and adherent by fibrous adhesions to the left side of the urinary bladder. The appendix points downward and its tip is adherent to the bladder. The transverse colon is adherent to the gall-bladder by a few fibrous bands.

Pericardial cavity. Negative.

Pleural cavities. Negative except for a few fibrous adhesions at both apices and at base of left lung.

Heart. Normal in size; pericardium and endocardium normal. Valves negative except for slight thickening at attached borders of aortic valves. The myocardium is firm and brownish red in color. Wall of left ventricle averages 14 to 16 millimeters in thickness.

Right lung. Surface smooth. On section numerous yellowish caseous nodules 1 to 5 millimeters in diameter are found at the apex, while in the middle lobe are many closely arranged recent tubercles 2 to 4 millimeters in diameter. These have a distinctly peribronchial arrangement. The lower lobe contains many similar nodules. Lung otherwise negative except for moderate carbon pigmentation.

Left lung. Pleural surface smooth except at apex and along posterior surface where there are a few fibrous tags. The apex is puckered containing a distinctly encapsulated caseous nodule 1 centimeter in diameter surrounded by a number of small firm nodules. Scattered throughout the remainder of the lung are nodules similar to those in the right lung.

Spleen. Weight 240 grammes; capsule smooth; cut surface dark red in color; trabeculae distinct; follicles indistinct.

Liver. Weight 1500 grammes. The capsule is normal except for a few

thickened slightly wrinkled areas on the upper anterior surface of the lower lobe. On section the cut surface shows red and greyish yellow mottling; the darker areas correspond to the centres of the lobules. Gall-bladder and ducts normal.

Gastro-intestinal tract. The stomach is dilated; its mucosa smooth, pale and covered with a thick tenacious mucus. The remainder of the gastro-intestinal tract is negative except for a small pit-like depression in the middle of the transverse colon which represents apparently a healed ulcer.

Right Kidney. Weight 230 grammes. The capsule strips with some difficulty leaving an exceedingly pale greyish-yellow cortex with deeply injected stellate veins. On section the pelvis is filled with a thin greyish yellow purulent fluid. The pyramids and adjacent cortex are streaked by greyish yellow lines of purulent infiltration. In many places the areas of suppuration are confluent, forming abscesses 0.5 to 1 centimeter in diameter filled with a thick pus containing fragments of necrotic tissue. The ureter contains a thin cloudly fluid.

Left kidney. Weight 160 grammes. The capsule strips with some difficulty leaving a coarsely lobulated pale yellow surface. On section the cortex is seen to be markedly thinned. The cut surface is pale yellow in color and has a glistening appearance. The iodine test for amyloid is negative. Ureter normal.

Urinary bladder. The wall is very greatly thickened and is firmly bound to the pelvis on the right, posteriorly, by dense connective tissue containing islands of fatty tissue. On removing bladder numerous pus cavities are opened, a thick yellow pus escaping. The mucosa of the bladder which shows irregular losses of substance is slightly granular and has a mottled greyish yellow color. The cavity of the bladder is filled with a thick mucoid pus and many of the pus-containing pockets opened in removing the bladder are found to communicate with the bladder being, apparently, diverticula.

Prostate, seminal vesicles and testicles. Normal.

Adrenals. Normal.

Aorta. Normal.

Anatomical diagnosis. Chronic ulcerative cystitis. Suppuration in diverticula of bladder. Chronic pericystitis. Pyelo-nephritis (right). Chronic diffuse nephritis. Pulmonary tuberculosis. Fatty liver with slight chronic passive congestion. Scar of right hip. Scar of old ulcer (?) in colon. Chronic peritonitis. Chronic neuritis.

Bacteriology. Cultures from right kidney sterile after 48 hours.

Histologic examination—Lung. Sections through nodular masses show tubercles made up of epithelioid cells, giant cells and lymphocytes and with central areas of caseation in and about which are slender beaded bacilli which stain by the Gabbet and Gram-Weigert methods. Careful examination of many sections revealed no evidence of the presence of actinomyces or other streptothricial forms.

Left kidney. A few small focal areas in cortex show increase of interstitial tissue with an occasional hyaline glomerulus. Other glomerular tufts in these areas are shrunken and lobulated with wide intra-capsular

spaces. The cells of the convoluted tubules are swollen and granular. A few hyaline casts are seen in the straight tubules.

Right kidney. Same chronic changes as in left kidney. In addition sections taken through the abscesses in the pyramids and cortex show irregular areas of suppuration. These areas are composed of polynuclear leucocytes and cell detritus in the midst of which are seen numerous typical actinomycetes colonies with well developed "clubs." The persisting kidney tissues about such areas are diffusely infiltrated with lymphocytes, plasma cells and polynuclear leucocytes, while surrounding some of the larger abscesses there is a poorly defined zone of highly cellular newly-formed fibrous tissue. In the diffusely infiltrated areas the glomeruli and a large proportion of the tubules can still be made out. The mucosa and submucous tissues of the pelvis are infiltrated with lymphocytes, plasma cells and fibroblasts. A variety of staining methods, including those for the tubercle bacillus, prove the actinomycetes to be the only organism present.

Bladder. Sections through the ulcerated portions of the bladder wall show an entire absence of epithelium. The mucosa is replaced by granulation tissue which is exceedingly rich in spindle shaped cells. On the surface of this tissue is a layer of partially necrotic cellular material containing a moderate number of leucocytes together with large clumps of cocci and a few bacilli. Small areas of necrosis extend into the deeper tissues of the bladder wall. The muscular coat shows a very marked increase of connective tissue of a highly cellular type. Although sections cut from a large number of blocks representing various portions of the bladder wall were examined for actinomycetes neither colonies nor filaments could be found. Stains for tubercle bacilli are also negative.

Histologic diagnosis. Actinomycosis of right kidney. Chronic ulcerative cystitis with extensive formation of granulation tissue. Slight chronic diffuse nephritis. Pulmonary tuberculosis. Old blood pigment in spleen. Congestion and fatty metamorphosis of liver.

The presence of colonies of actinomycetes in the kidney abscesses leaves no doubt as to the nature of the renal lesion. The failure to find either colonies or filaments of actinomycetes in the bladder wall, however, raises a question concerning the character of the bladder lesion. On the other hand the presence of actinomycosis of the kidney and the peculiar character of the histological changes in the bladder wall indicate the probability that this lesion also is actinomycotic in nature.

The mode of infection in this case is doubtful and it is more than possible that the lesion in the urinary tract was secondary to a primary focus which had existed in some other part of the body but which had disappeared at the time of autopsy. The small scar-like area in the colon, the various peritoneal adhesions and the old scar on the outer aspect of the right thigh each suggest antecedent inflammatory conditions offer-

ing possible routes of infection; but no connection could be traced between any of these and the lesion in the urinary tract. The presence of tubercle bacilli in the lung and the absence of actinomyces dispose of any possibility that the lung lesion might have been the portal of infection.

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THE ELIMINATION OF ENDOGENOUS URIC ACID IN A CASE OF CHRONIC GOUT.*

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During the past few years as the result of numerous investigations of uric acid metabolism, views concerning uric acid formation have been greatly modified. The theory, once almost universally accepted, that in mammals, uric acid is a product of the metabolism of all albumins and represents a stage preceding the formation of the end-product, urea, has been abandoned. A considerable number of definite new facts has been established and new theories have been brought forward to explain them.

Only a brief summary of the more important points in regard to this work will be given here. For more complete information and for references to the extensive literature the reader is referred to reviews by Baumgarten, Fitcher and others.¹

According to recent views the uric acid eliminated by the normal human body when the individual is on a mixed diet is from two sources; that from the food, which is called the "exogenous" uric acid; and that from the metabolic processes of the individual which is known as "endogenous" uric acid. The same terms, first used by Burian and Schur,² apply also to the bodies closely related to uric acid known as the xanthin or purin bases. Uric acid and purin bases together are called "purin bodies" or "purins." It is stated³ that of the purins eliminated in the urine

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nine-tenths are present as uric acid and one-tenth as purin bases. Kaufmann and Mohr,⁹ however, find variations in the relations of uric acid to total purins.

As a result of the work of Mares,⁴ Horbaczewski,⁵ and others, the exogenous purins in the urine of mammals are believed to arise, not from the decomposition of all albumins, but only from the nucleins and the preformed purins which they contain. The other nitrogenous elements of the food are said to produce no uric acid or purin bases in the urine.

More recent investigations, particularly those of Burian and Schur,⁶ Siven,⁷ and others, have led to general conclusions regarding the formation and elimination of exogenous and endogenous uric acid. The validity of some of these conclusions may fairly be questioned.

According to these investigators the endogenous uric acid and purin bases found in the urine arise from metabolic processes which go on independently of the amount or composition of the food, *e. g.*, from the destruction of the nuclein of body cells.

Burian and Schur have also claimed that the exogenous and endogenous uric acid and purins found in the urine of man can be separately and accurately determined. From analysis and experiment they conclude that the following articles are practically free from nuclein causing uric acid elimination: milk, cheese, eggs, white bread, butter, rice, lettuce, cabbage and potatoes. Such a diet they call a "purin-free diet." They consider that the uric acid eliminated by an individual on a purin-free diet is derived exclusively from endogenous sources. They have also attempted to analyze accurately articles of food rich in nucleins that produce purin elimination. Such foods are thymus, liver, pancreas, spleen, kidney, and among the vegetables, peas and beans. The extractives from muscle also contain nuclein.

It has been contended by Burian and Schur and others that the endogenous uric acid normally eliminated by man on a purin-free diet is a constant quantity for each individual, but that this may vary in different individuals. In one individual the value of the daily endogenous uric acid elimination was found not to vary more than 0.03 grams in determinations made at different times in a period of 18 months. In different individuals it varied from 0.2 grams to 0.7 grams. It is stated that this constant value represents the minimum amount of uric acid excreted by the

individual; that the constant figure indicates normal metabolism; that its increase points to increased cell destruction going on in the body. The statements in this paragraph apply only to uric acid metabolism in health.

From experiments the conclusion has been drawn that it is also possible, when a person is on a mixed diet, to determine what portion of the uric acid elimination is endogenous and what portion is exogenous. The degree to which the foods rich in nuclein and preformed purins cause uric acid elimination is said to depend not on the individual, but on the amount and kind of food ingested. For example, it is claimed by Burian and Schur that about 50% of the amount of uric acid or other oxypurins taken into the body with the food under normal conditions is constantly eliminated as uric acid, and that while the remaining 50% may undergo further decomposition in the course of metabolism, being changed into other products, this certain definite portion is eliminated unchanged. This would give a method for determining the exogenous portion of the uric acid elimination, providing the nuclein content of different foods could be accurately estimated. If the metabolism of exogenous and endogenous uric acid were carried on in the same way and in accordance with this law, the endogenous uric acid eliminated in the urine would represent 50% of that normally formed by the metabolic processes of the body independently of the food. Variations from these proportions would show that the metabolism was not normal and the degree to which the body could eliminate, as uric acid, the purin bases taken with the food would indicate the degree to which it could oxidize the uric acid arising in itself.

These views regarding uric acid metabolism in health are largely the result of the experimental studies of Burian and Schur, and Siven and have been somewhat widely accepted. They have also been made the basis of some few studies with regard to uric acid metabolism in disease, and especially in gout. The studies of Vogt and others⁸ lead them to the conclusion that in gout the exogenous purins are more slowly excreted than in health. Kaufmann and Mohr⁹ have published studies which indicate that the values of both endogenous and exogenous uric acid between attacks are within normal limits. It is generally admitted that in the acute gouty attack there is constantly a greater excretion of uric acid than in the free intervals, and that probably it is preceded by diminution. When attacks follow each

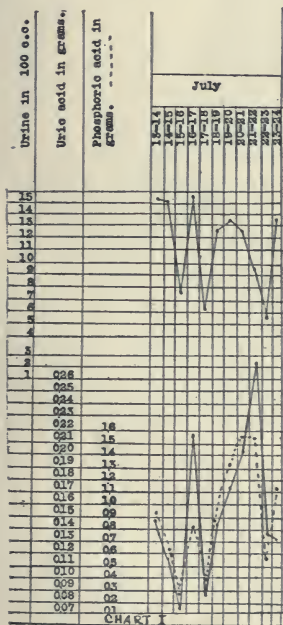
other irregularly the picture becomes confused. There has been considerable discussion as to whether the curves of the uric acid and of the phosphoric acid excretion are parallel in gout, but the matter cannot be said to be entirely settled.

The present investigation was undertaken for the purpose of obtaining, if possible, further information on these points.

The case here reported is one of chronic gout in which a few urinary tests were made while the patient was on a purin-free diet. The first series of analyses cover a period of 10 days. The 24-hour quantity, the specific gravity, and the daily amount of uric acid and of phosphates were determined.

The uric acid was determined by the Folin-Hopkins method, and the phosphoric acid by titration with uranium nitrate. The conditions under which the patient lived were constant as regards exercise (which consisted of light work about the ward) and sleep. Movements of the bowels occurred regularly. The urine

was collected and kept in a large stoppered bottle in the bathroom of the ward until the 24-hour amount was obtained, and then placed on ice. The room temperature varied from 72° F. to 85° F.



Case.—C. F., male, aged 52, gardener and storekeeper, American, was admitted to the Albany County Hospital, October 23, 1902, complaining of swollen joints of hands and feet. His father was born in England, used alcohol freely; mother still living, born in this country of English parents. Her people used liquors freely. There is no family history of gout or rheumatism.

The patient has used alcohol all his life. Ale has been his favorite beverage. He has always eaten freely, especially of meats and sweets. He has never been compelled to do much hard work. The first attack of gout affecting the great toe of the right foot, occurred about 12 years before his admission to the hospital. Since then he has had recurring

similar attacks in various joints. The joints of the fingers and toes have repeatedly become swollen and now tophi may be seen in the fingers, toes, heels, in both ears, and on the nose. Physical examination of the chest is negative as regards the lungs; the heart is enlarged and aortic murmurs, both systolic and diastolic, are heard. The urine contains a trace of albumin, and a few hyaline and granular casts, but no sugar. Clinical determinations of urea by the Doremus method give uniform low values, 8 grams to 26 grams per day. Leukocyte count July 15, before dinner, 6,000.

The tests were commenced July 13, 1904. At first the diet was not modified, and consisted of oatmeal and milk for breakfast; tea, bread, and vegetables for dinner, and bread and tea for supper. As the patient ate no meat, it was practically a purin-free diet. July 19 he was put on the following purin-free diet: breakfast consisted of white bread and milk, with an egg; dinner was the same as breakfast; supper consisted of bread and milk.

TABLE I.

Date. 1904.	Urine in cc.	Specific gravity.	Uric acid in grams.	Phosphoric acid in grams.	Remarks.
July 13-14...	1520	1010	0.149	0.912	Patient feeling well; temperature normal; about ward.
" 14-15...	1505	1011	0.116	0.622	
" 15-16...	770	1010	0.075	0.269	
" 16-17...	1540	1010	0.219	0.800	No marked pains.
" 17-18...	620	1010	0.087	0.372	
" 18-19...	1265	1009	0.142	0.875	
" 19-20...	1335	1010	0.173	1.33	Severe pains in several joints; temperature, 100.6°.
" 20-21...	1260	1010	0.205	1.575	
" 21-22...	970	1010	0.271	1.57	Patient in bed.
" 22-23...	550	1011	0.138	0.583	Feeling better today.
" 23-24...	1335	1012	0.132	1.140	Feeling well; out of bed.

The patient was about the ward and able to help in light work, though suffering some slight pain, until the early morning of July 21 (2 a.m.), when he began to have severe pains in the fingers, shoulders, and hips. His temperature, which had previously been normal, rose to 100.6° at 7 a.m. He remained in bed during the day, and by night the pains had become less severe. On the morning of July 22 the house physician prescribed wine of colchicum, of which the patient received 18 drops on July 22, and also the same amount on July 23 and 24. On July 24 he was out of bed.

Table I and Chart I give the total amount of urine in 24 hours, the specific gravity, uric acid, and phosphoric acid.

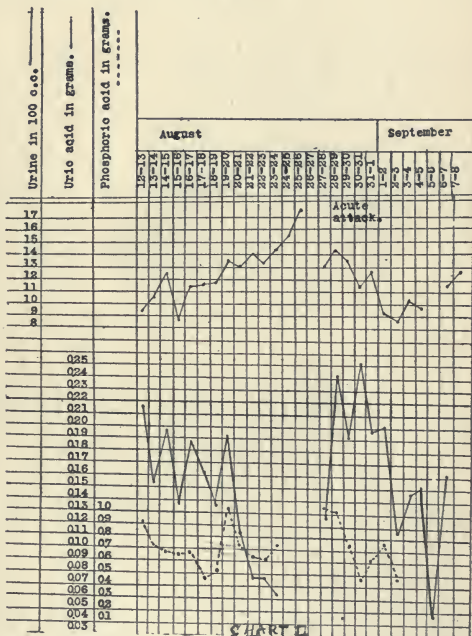
The second series of analysis covered a period of about 22 days. On four days (August 25, 26, 27, and September 3) no tests could be made. The urine was collected in stoppered bottles and put, as soon as passed, on ice, in a small refrigerator placed in the ward for that purpose, and it remained on ice until the tests were made. (The fact that the

To Illustrate Dr. Laird's Article on "The Elimination of Endogenous Uric
Acid in a Case of Chronic Gout"

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urine was placed on ice at once without waiting until after the 24-hour amount was collected makes the results in the second series of tests somewhat more accurate than those in the first.) A record was kept of the temperature, pulse, respiration, and number of stools. Frequent leukocyte counts were made. The 24-hour amount of the urine, the specific gravity, and the daily excretion of uric acid and phosphoric acid were estimated, the same methods being used as in the first series. A number of determinations of the total acidity of the urine was also made. Both the Freund and the Folin methods were used in parallel tests. The room temperature varied from 70° F. to 83° F.



During this series of tests the patient was kept on the following diet: Breakfast, an egg, soft boiled, with bread and butter and glass of milk. Dinner, same as breakfast. Supper, a bowl of bread and milk. The only modifications were: August 27, he ate no eggs; August 31, the egg was omitted at breakfast; September 1, breakfast consisted of a slice of bread and butter; September 2, no eggs were eaten. Water was allowed, but the patient drank little of it (except on August 28, when he drank six glasses); on August 30 and 31 he did not take any water.

With regard to exercise and bodily exertion, the patient walked about

the ward and helped in light work, such as washing dishes and making beds.

He was quite free from pain until August 19, when one of the joints of the right forefinger became painfully swollen, and August 20, the skin ruptured, and a discharge of whitish puriform material occurred. He had little pain from that time until August 29. August 29, 6 a.m., the left heel became swollen and painful. August 30, patient in bed. The skin over the heel broke, and a profuse bloody discharge containing

TABLE II.

Date.	Urine in cc.	Specific gravity.	Uric acid in grams.	Phosphoric acid in grams.	Remarks.
August 12-13.	985	1015	0.216	0.908	No marked pains.
" 13-14.	1030	1010	0.154	0.715	
" 14-15.	1230	1010	0.196	0.682	
" 15-16.	890	1012	0.138	0.649	
" 16-17.	1140	1015	0.188	0.684	
" 17-18.	1180	1014	0.161	0.483	Joint of forefinger swollen.
" 18-19.	1190	1012	0.138	0.505	
" 19-20.	1350	1014	0.192	1.026	Discharge from forefinger.
" 20-21.	1300	1015	0.112	0.728	Comparatively free from pain.
" 21-22.	1400	1014	0.079	0.63	
" 22-23.	1320	1011	0.076	0.60	
" 23-24.	1420	1011	0.063	0.724	
" 24-25.	1550	.....	.....	.....	
" 25-26.	1750	.....	.....	.....	Left heel swollen; painful.
" 26-27.	.....	.....	.....	.....	
" 27-28.	1300	1011	0.126	1.059	
" 28-29.	1420	1010	0.231	1.022	
" 29-30.	1350	1011	0.192	0.735	
" 30-31.	1150	1011	0.250	0.493	Heel discharging freely.
September 1-2	1280	1011	0.196	0.62	Pain less marked.
" 2-3	930	1011	0.202	0.781	.....
" 3-4	1010	1012	0.111	0.484	No pains.
" 4-5	980	1012	0.147	.....	Patient out of bed.
" 5-6	.....	.....	0.152	.....	.....
" 6-7	1150	.....	0.046	.....	.....
" 7-8	1260	.....	0.160	.....	.....
" 8-9	1525	.....	.....	.....	.....

white particles occurred, which gave marked relief. At this time there was pain on swallowing, pain and soreness in the neck and about the clavicles, with more or less pain throughout the entire left side. Hot lead water and laudanum were applied the painful areas. At 5 p. m. the temperature was 100.2°. August 31, the pain and stiffness were much less marked. September 1, some headache and stiffness about the back of the neck. September 2, pains all over the body. September 3, pains had disappeared, and patient felt better. September 4, patient out of bed. No medicine was given during this series of tests.

Table II and Chart II give the amount of urine in 24 hours, the specific gravity, and daily excretion of uric acid and phosphoric acid.

Table III—the temperature, pulse, respiration, stools, and leukocyte counts. Table IV—the determinations of the total acidity of the urine.

Daily microscopic examinations of the urine showed constantly a trace of albumin, and a few hyaline and granular casts. Clinical urea determinations by the Doremus method gave low values—17 grams to 20 grams per day.

It will be noted from a study of the tables and charts that the “*endogenous*” uric acid elimination was, for the most part, below that of a normal individual. According to the investigations

TABLE III.

Date	Hour.	Temperature.	Pulse.	Respiration.	Stools.	Leukocytes.	
						Hour.	Number per cm.
August 12-13.	10.30 a.m.	98	72	24	0	.....	.....
“ 13-14.	9.20 a.m.	97	80	25	0	.....	.....
“ 14-15.	11.15 a.m.	97.2	80	16	I	11.15 a.m.	9,000
“ 15-16.	10.15 a.m.	97.6	72	24	I	4.30 p.m.	7,000
“ 16-17.	3.30 p.m.	97.6	72	20	I	3.30 p.m.	7,000
“ 17-18.	9.30 a.m.	97.6	72	20	I	9.30 a.m.	6,000
“ 18-19.	2.30 p.m.	97.8	80	18	I	.....	.....
“ 19-20.	5.30 p.m.	98.8	68	30	I	5.30 p.m.	6,400
“ 20-21.	2.30 p.m.	98	72	20	I	.....	.....
“ 21-22.	3 p.m.	98.8	64	24	I	3 p.m.	5,200
“ 22-23.	6.15 p.m.	98.4	68	20	I	6.15 p.m.	5,200
“ 23-24.	3.15 p.m.	98.4	68	20	I	3.15 p.m.	6,440
“ 24-25.	4 p.m.	98	72	18	I	.....	.....
“ 25-26.	9 p.m.	99.6	72	18	I	.....	.....
“ 26-27.	2.30 p.m.	98	64	20	I	2.30 p.m.	6,060
“ 27-28.	8.30 a.m.	98	84	20	I	8.30 a.m.	6,000
“ 28-29.	11 a.m.	98.8	84	20	I	11 a.m.	6,000
“ 29-30.	9.30 a.m.	98	72	20	I	.....	.....
“ 30-31.	5 p.m.	100.2	72	20	I	5 p.m.	7,000
“ 31-1..	9.30 a.m.	98	72	20	I	.....	.....
September 1-2	11 a.m.	97	72	16	I	11 a.m.	7,000
“ 3-4	9 a.m.	98	72	....	I	.....	.....
“ 4-5	.....	99	80	18	I	.....	.....

quoted, the extremes in daily excretion in different normal individuals were 0.2 grams and 0.7 grams. In this case the daily excretion was always below 0.2 grams, except at the time of acute exacerbations, when the highest point reached was 0.27 grams. The lowest point reached was 0.046 grams. Between these two extremes were marked fluctuations. The values in the intervals between acute exacerbations were not invariably low, but on several occasions approached the highest values reached during an attack. Kaufmann and Mohr⁹ found the endogenous uric acid excretion in five cases of chronic gout to be within

normal limits, varying between 0.357 grams and 0.660 grams per day in different cases. One of Fitcher's¹⁰ patients, during three periods of twenty-four hours each, had practically no uric acid excretion.

In a general way in the first series, the phosphoric acid curve follows the uric acid curve, as closely, certainly, as in Cases II and III, reported by Fitcher.¹⁰ It will be noted, however, that in the second series of tests, between August 27 and 31, the phosphoric acid curve fell, while the uric acid curve was rising to

TABLE IV.—ACIDITY.

Date.	Cc. of uranium solution used for 50cc. urine.	Freund method.		Cc. of N/10 NaOH per 25 cc. urine.	Folin method.	
		Corresponding number of cc. of N/10 NaOH per 100 cc. urine.	Cc. of N/10 NaOH per 24 hours.		Cc. of N/10 NaOH per 100 cc. urine.	Cc. of N/10 NaOH per 24 hours.
August 17-18.	1.35	3.69	43.54	2.8	11.2	132.16
" 18-19.	1.2	3.27	38.91	2.9	11.6	138.04
" 19-20.	2.1	5.71	77.08	3.95	15.8	213.30
" 20-21.	1.2	3.27	42.51	5.87	23.58	307.54
" 21-22.	1.55	4.23	59.22	5.95	23.8	333.20
" 22-23.	1.2	3.27	43.16	5.1	20.4	269.28
" 23-24.	1.15	3.17	45.01	5.15	20.6	288.85
" 24-25.	.....	.....	.....	.....	.....	.....
" 25-26.	.....	.....	.....	.....	.....	.....
" 26-27.	.....	.....	.....	.....	.....	.....
" 27-28.	2.65	7.24	94.12	7.67	30.68	398.84
" 28-29.	2.5	6.83	96.98	6.6	26.4	374.88
" 29-30.	2	5.46	73.71	5.15	20.6	278.10
" 30-31.	1.2	3.27	37.60	4.85	19.4	223.10
" 31-1.	1	2.73	34.94	5.3	20.52	262.71
September 1-2	1.47	4.01	51.32	7.7	28.8	257.84
" 2-3	.....	.....	.....	.....	.....	.....

its highest point. This recalls Fitcher's statement in regard to his Case III: "There was, however, an unexplainable drop in the phosphoric acid curve between April 8 and 17, when it failed to correspond at all with the uric acid curve." In the paper referred to there is no statement indicating that the patient was kept on a purin-free diet. It will be noted that the daily excretion of phosphoric acid in this case is considerably below the normal given by Fitcher (2.5 grams); the highest point reached in our determinations being 1.57.

The leukocyte counts made at irregular intervals in connection with the second series of tests do not suggest any definite rela-

tionship between the number of leukocytes and either the phosphoric acid or uric acid excretion. No constant digestive leukocytosis was noted, and the count was always distinctly within normal limits.

The total acidity was determined both by the Freund¹¹ method (which is based upon the assumption that the acid reaction of the urine is referable exclusively to the diacid phosphates) and by the Folin¹² method. Folin believes that the Freund and all similar methods are open to the fatal objection that a considerable part of the acidity of the urine is due to organic acids. He titrates the urine with decinormal sodium hydrate solution after first guarding against the disturbing effect of calcium and ammonium salts by the addition of about 20 grams of powdered potassium oxalate to the 25 cubic centimeters of urine titrated.

In this series of tests the Folin method gave uniformly higher values than the Freund method. Even the determinations by the Folin method were below the normal values given by Folin¹³ as varying, in thirty normal urines, between 554 cubic centimeters and 669 cubic centimeters of decinormal sodium hydrate solution per twenty-four hours, and below values he obtained for individuals on a similar purin-free diet. The highest value obtained in this series was 398 and was found on August 28. It was nearly as high on August 29. These were the days when the patient was suffering more pain than usual. No constant relationship appears to exist between the total acidity and the excretion of uric acid in this case.

Definite conclusions regarding uric acid formation cannot be drawn from such experiments as are here reported. While it has been considered justifiable to make important deductions regarding uric acid formation in health from a study of uric acid excretion, the presence of disease conditions introduces disturbing factors. The recent work of Löwi,¹⁴ Folin¹⁵ and others, indicates that even the widely accepted theories of Burian and Schur regarding uric acid metabolism in health may not be well founded. Löwi claims that it is impossible by our present methods to determine accurately the amount of exogenous or endogenous purin eliminated. Folin¹⁵ has found the endogenous uric acid elimination in health not to be constant on certain purin-free diets. He questions whether all the endogenous uric acid eliminated in health is derived from the nuclein of body cells. The possibility of the synthetic formation of endogenous uric acid in man, even in health, is asserted by

several investigators.¹⁶ If it were true, as has been claimed by Burian and Schur, that in health the uric acid eliminated in the urine represented half of that formed in the body, and this proportion remained constant in disease, quantitative uric acid determinations would certainly be of great value. Other factors in metabolism, such as digestion, sleep and exercise, would, however, still have to be considered. Digestion affects uric acid elimination decidedly, if constipation or diarrhea occur. According to Schittlhelm,¹⁷ the purin bodies found in feces are in part derived from unabsorbed parts of the food, in part from bacteria, and in part from the secretion of intestinal glands. In diarrhea, a rapid passage of food purins through the intestine would increase the fecal output, and less purin would be absorbed to be excreted in the urine. In this case there was no diarrhea, the bowels moving regularly, as noted in Table III. Siven,¹⁸ Pfeil and Rockwood have found the elimination of uric acid to be greater by day than by night; Rockwell suggests that the difference is due to a lessened rate of cellular metabolism during rest in bed. Sherman¹⁹ has failed to find any increase in uric acid elimination resulting from vigorous exercise. Rockwood¹⁸ found an increase in endogenous uric acid elimination after exhaustive labor, but not after moderate exercise. It has been maintained²⁰ that if the subject is in poor physical training, exercise causes an increase in uric acid elimination. It is probable that there was chronic nephritis in this case; this introduces another disturbing factor.

Whether there is really a constant relationship between the endogenous uric acid elimination and the "endogenous" phosphoric acid elimination in this case, cannot be inferred, since the diet, while purin-free, was not free from elements containing exogenous phosphoric acid. Phosphorous may be taken into the food in other forms than that contained in the nucleins, and according to Chalmers Watson²¹ and others, this prevents any possible parallelism in the curves. Kauffmann and Mohr²² state that phosphoric acid excretion varies with the varying needs of the body for phosphoric acid.

Horbaczewski's theory that endogenous uric acid was derived exclusively from the breaking down of leukocytes is no longer accepted. The work of Magnus-Levy,²³ Richter,²⁴ and others, has demonstrated the fallacies of his arguments and there does not now seem to be any reason why the leukocyte curves should

parallel the uric acid curve. There is no constant parallelism between the two in this case.

SUMMARY.

The uric acid elimination in a case of chronic gout kept on a "purin-free" diet was below so-called normal limits. In the intervals between the exacerbations there was marked variation in the amount of uric acid eliminated. Low values were reached preceding acute symptoms, and at times during the intervals the excretion was very low, at other times, however, the highest values reached during an attack were approached.

The phosphoric acid elimination was below normal. In the first series of tests the phosphoric acid curve followed the uric acid curve quite closely; in the second series, not at all.

The leukocyte counts were normal. They did not vary with the uric acid excretion. No digestive leukocytosis was noted.

The acidity was at all times below the average normal acidity. The highest values were obtained during one of the acute exacerbations.

Present views regarding uric acid elimination may be summed up in a few words: The principal source of the uric acid eliminated by man under normal conditions is the nucleins. We find an increased elimination of uric acid following the ingestion of substances contained nucleins. This source of uric acid can be controlled. The endogenous uric acid is probably derived from more than one source. A large portion comes from the decomposition of the nuclein of body cells, but a part is probably formed by direct synthesis. When certain purin-free diets have been used, the endogenous uric acid has in certain individuals shown a somewhat constant value in health, when other factors in metabolism were constant. When other forms of purin-free diet were employed the amount of endogenous uric acid was not constant, even in health. In disease the elimination of uric acid has shown marked fluctuations. How large a portion of the endogenous uric acid elimination under pathologic conditions is formed by synthesis is not known. The nucleins are one source of the phosphoric acid excretion in the urine, but not the only source, and there is no constant relationship between uric acid and phosphoric acid excretion. Though the leukocytes are a source of endogenous uric acid

they are by no means the only source, and their number has no constant relationship to the excretion of uric acid. The work of the past few years has shown the fallacies in certain generally accepted theories regarding the source of uric acid and established definitely a very few facts in regard to uric acid metabolism. The part which uric acid plays in gout is still unsettled.

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Editorial

The truth is, we die through our ancestors; are murdered by our ancestors. Their dead hands stretch forth from the tomb and drag us down to their mouldering bones. We, in our turn, are now at this moment preparing death for our unborn posterity. 'This day those that die do not die in the sense of old age; they are slain. Nothing has been accumulated for our benefit in ages past. All the labor and the toil of so many millions continued through such vistas of time, down to those millions who at this hour are rushing to and fro in London, has accumulated nothing for us—nothing for our good. The only things that have been stored up have been for our evil and destruction—diseases and weaknesses, crossed and cultivated and rendered almost part and parcel of our very bones.

The Story of My Heart.

RICHARD JEFFERIES.



The Wistar Institute Under the title of Bulletin No. 1, the Wistar Institute has issued a circular directing attention to the circumstances of its creation and its purposes, which is of general interest. The Wistar Institute is one of the few American corporations endowed for the advancement of knowledge, and enabled to do this upon its income, without other financial aid.

In 1892 a charter was secured by General Isaac J. Wistar, of Philadelphia, from and under the laws of the Commonwealth of Pennsylvania, conferring perpetual incorporation, with the right of perpetual succession and a corporate seal, upon a corporation to be called The Wistar Institute of Anatomy and Biology. A modern fireproof building costing \$125,000, was erected at Thirty-sixth Street and Woodland Avenue, in the city of Philadelphia, upon land donated by the University of Pennsylvania, and an endowment sufficient to yield an annual income of \$3,000, was vested by General Wistar in a trustee. The Institute was formally opened on May 21, 1894.

The principal objects of the Institute, as stated in its charter, are sheltering, preserving and increasing the extent and usefulness of the anatomical museum originally instituted by Dr. Caspar Wistar, and the promotion of advanced study along biological

lines. The nucleus of the Institute's anatomical museum was the first collection of the kind in America, begun by Dr. Caspar Wistar, while Professor of Anatomy in the University of Pennsylvania, 1808-1818. After his death it was presented by his widow, Elizabeth Mifflin Wistar, to the University of Pennsylvania, and the University of Pennsylvania presented it to the Wistar Institute.

The first building of the Institute, erected in 1893, is approximately 220x67 feet, and four stories high. In 1897 there was erected a new wing, 72x46 feet, and of the same height. In the basement of this wing are located the heating and lighting plants.

About one-half of the entire building is used as a museum. The other half is devoted to laboratory purposes. During the interval between the opening of the institute in 1894 and the present year, 1905, the endowment has been increased by the same donor until the annual income is approximately \$40,000. Of this about one-half in each year added to a reserve fund. By the will of General Isaac J. Wistar, who died September 18, 1905, the Wistar Institute becomes residuary legatee to his estate. During this interval also, under the successive directorships of Dr. Harrison Allen and Dr. Horace Jayne the collection in the lines of human and comparative anatomy has grown from some 3,000 objects to more than 14,000; the value of the collection having increased in even greater proportion.

A good working library has been accumulated and the laboratories are equipped with modern apparatus. In accomplishing these results the Institute has been materially assisted by special contributions from those interested in the work.

In January, 1905, Dr. Milton J. Greenman was elected director. The following April a Conference of American Anatomists was called at the Institute for the purpose of considering its future policy.

The principal object of the Institute is research.

The research shall be; (a) in the field of neurology, (b) comparative anatomy and embryology.

The committee of management recommends: (a) that a subvention to the *Journal of Anatomy* be granted; (b) that a committee be appointed to consider the relations of the Wistar Institute to American anatomists; and (c) that the Wistar Institute apply to the Association of American Anatomists for co-operation.

An Advisory Board of Anatomists has been chosen as follows: Dr. Lewellys F. Barker, Professor of Medicine, Johns Hopkins University, Baltimore; Dr. Edwin G. Conklin, Professor of Zoology, University of Pennsylvania, Philadelphia; Dr. Henry H. Donaldson, Professor of Neurology, University of Chicago, Chicago, Ill.; Mr. Simon H. Gage, Professor of Histology and Embryology, Cornell University, Ithaca, N. Y.; Dr. G. Carl Huber, Professor of Histology and Embryology, University of Michigan, Ann Arbor, Mich.; Dr. George S. Huntington, Professor of Anatomy, Columbia University, New York; Dr. Franklin P. Mall, Professor of Anatomy, Johns Hopkins University, Baltimore, Md.; Dr. J. Playfair McMurrich, Professor of Anatomy, University of Michigan, Ann Arbor, Mich.; Dr. Charles S. Minot, Professor of Histology and Human Embryology, Harvard Medical School, Boston, Mass.; and Dr. George A. Piersol, Professor of Anatomy, University of Pennsylvania, Philadelphia, Pa.

It is desired to make the Institute a central station for anatomical research in this country, and for this purpose to co-operate in every way possible with University work in this field, and while it is proposed, for the time being, to direct the energies of the Institute largely to problems in neurology, opportunities for work will always be granted to investigators interested in other divisions of anatomy.

At present the Institute does not undertake any independent publications, but will utilize the existing scientific journals.

The Institute will act as conservator of series of specimens or other material already studied which should be preserved for future reference, and which may for this reason be presented to the Institute.

It will send out to investigators, in other places, materials for research work which it may have in its museum or collect and prepare such material whenever this is possible.

The reproduction of new models when they are of great value for teaching will also be undertaken.

If the investigators of anatomy in our country, whether they be teachers, physicians or surgeons, will make use of this Institute, giving their advice and encouragement, it is believed that it will become a prolific source of anatomical knowledge.

Scientific Review

ULTRAMICROSCOPIC STUDIES

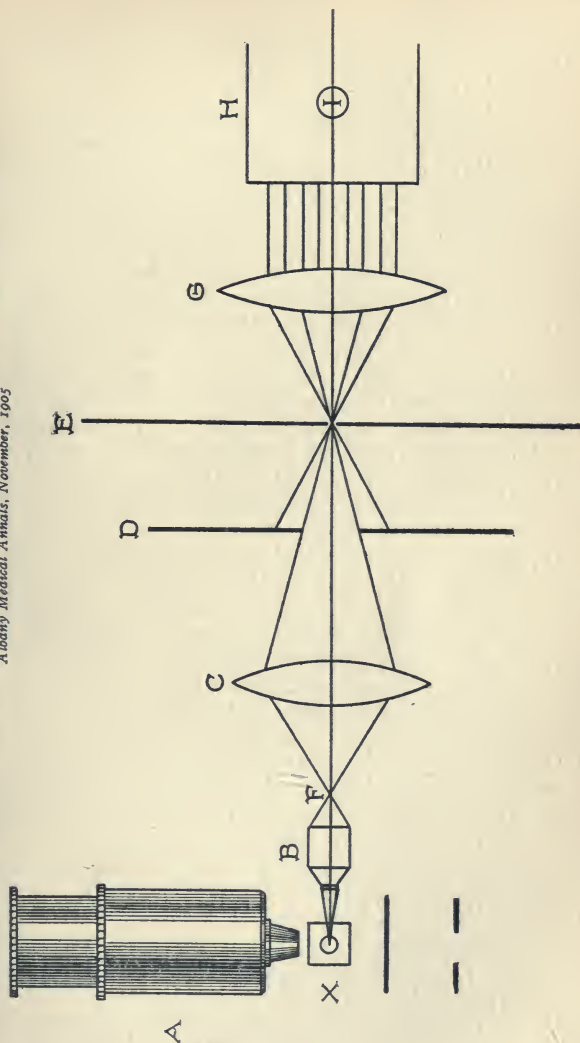
RAEHLMANN, E.

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With the ordinary microscope it is not possible to get a clear image of an object less than $\frac{1}{4}$ of a micron in diameter. In 1903 Siedentopf and Zsigmondy (*Annalen der Physik*. 1903 Folge 4, Bd. 10) published an article in which they described an apparatus now generally called the "ultra-microscope," by the use of which very much smaller objects can be seen. With it one is able to detect particles 0.005 microns or less in diameter. The improvement consists not in an increase in the magnifying power of the instrument, but in a change in the method of illumination. Particles are seen as apparently self illuminated objects in a dark field. This appearance is produced by lateral illumination. The minute particles are suspended in fluid or a transparent solid into which the intensest light obtainable passes, coming from the side; the particles then become visible in the same way that motes in a dusty room appear in a sunbeam. No light enters the microscope except that reflected or refracted from the particles themselves. The original apparatus devised by Siedentopf and Zsigmondy is represented in the diagram. I, represents an arc lamp, the source of the light. This is enclosed in a box with an opening in the left side. Sunlight may be used. G is a lense which throws a real image of the source of light on a slit E, behind the slit is placed an iris diaphragm D and then a second lens

To Illustrate Dr. Laird's Article on "Ultramicroscopic Studies"

Albany Medical Annals, November, 1905



Apparatus for Lateral Illumination
(after Raehlmann)

which forms an image of the slit $\frac{1}{4}$ its actual size. Behind this image is placed a microscopic objective B (A. A. of Zeiss) which acts as the last condenser and forms an image $\frac{1}{36}$ the size of the slit, which falls on the preparation to be examined and intensely illuminates a field about 1.5 microns deep and 3 microns wide. For examining solids a small additional stage is attached to the large stage of the microscope stand. This can be moved up and down. For the examination of liquids a small container is screwed to the objective, bringing the front lens of the objective in contact with the fluid and thus obviating focusing. The sides through which the light enters and leaves the container are made of quartz which has been deprived of its double refracting power by melting.

In order to be seen the particles must not be too near together, at least 0.25 microns apart, and their index of refraction must be different from that of the medium in which they are suspended. Not all particles of the same size are seen when any given intensity of light is used. The refraction index of particles the same size may vary and so some comparatively large objects visible by the ordinary direct illumination may remain invisible with the ultra-microscope because too little light comes from them into the eye. The images seen are merely luminous points, and the size and shape of the particles cannot be judged from their appearance. Surrounding each particle there is usually one and sometimes several rainbow rings or halos. These are more conspicuous about the larger and more highly refracting particles. In the case of very small particles they may be absent. If two particles lie close together these halos come in contact with each other and their adjacent sides become flattened. If several such particles lie side by side an appearance resembling tissue is seen. On account of these optical difficulties the method is not adapted for the study of histological sections.

The inventors studied the small particles of gold found in glass, colored ruby red by the addition of this metal, such as is used in the comparison wedge of hemoglobinometers. With ordinary illumination and the highest magnification that can be obtained this glass appears perfectly homogeneous, but with the ultra-microscope each individual particle of the gold becomes visible as a luminous point. These workers were also able to calculate the size of the particles seen. The amount

of gold in the glass was known, the number of the particles seen in a definite volume of glass was counted and from these data the size of the particles estimated. They found that particles as small as 0.005 microns in diameter could be seen. They also made some observations on colloidal solutions.

Raehlfmann, working in the Zeiss laboratory at Jena with the best obtainable ultra-microscopic apparatus has investigated various staining solutions. He was able to demonstrate in them particles, consisting of the staining material; these, in some cases, reflected light of their own color and appeared as particles the color of the stain. This method of examination, he thinks, will be found useful in the analysis of dyes and the detection of adulterations. So-called mixed stains, for instance greens produced by mixtures of yellow and blue, showed separate particles of the constituent stains lying side by side; in other cases new combinations were found, and the fine particles presented differed in form, color and movement from the particles of either of the two components. In some cases there appeared to be a migration of the particles of one component to the particles of the others, which they covered over and enclosed. These appearances noted in mixed stains suggest to Raehlfmann a new explanation of the staining of histological specimens. Hitherto the staining of cell protoplasm and nuclei has been thought of as a process by which these parts of the cell become saturated with the staining solutions perhaps held in the meshes of the protoplasmic network, the staining material being in solution and solid matter not entering into the cell. Now we may suppose that solid particles are transferred to the cell and that certain portions of the cell become surrounded and covered with them. In this way alterations in the morphology of the cell or its contents may occur, due solely to the addition of particles of the stain to various parts of the cell. The occurrence of a special reaction of a cell or portion of a cell with a dye, is perhaps due to the fact that these parts exert an attraction for particles of the stain similar to that shown between particles in mixtures of two staining solutions.

This investigator has also studied solutions of albumin. In all solutions of albumin, when sufficiently diluted, small particles were found varying in size, some of them not more than 0.005 microns in diameter; all of these were in movement,

the smaller ones more actively than the larger ones. The movement was more energetic in the more highly diluted fluids. The particles were seen in dilutions as high as 1 to 300,000. Body fluids and albuminous urine exhibited similar phenomena. The urine moderately diluted showed numerous particles; when it was boiled and the precipitate of albumin was filtered out only very few particles could be seen. The author believes even the very finest of the particles are albuminous. In a case of chronic interstitial nephritis the urine showed a large number of particles even after boiling and filtering out the albumin, these were perhaps propeptone. Accordingly the author concludes that it may not only be possible to determine optically the presence of albumin in the urine but even to determine the kind of albumin present, by examination before and after the application of heat. If a fixed dilution is used it may be possible to estimate the amount of albumin.

Raehlmann also studied solutions of gum arabic, dextrose and maltose. All of these solutions contained particles. Solutions of glycogen were homogenous until diluted up to 1 to 10,000 then particles were noted and were found in high dilutions up to 1 to 300,000, though glycogen could no longer be detected in the solution by any chemical test. When diastase was added to the glycogen solutions, the glycogen particles disappeared and in their place appeared particles entirely different, both as regards appearance and size. These resembled those seen in solutions of dextrose and other sugars, and were much less numerous than the glycogen particles. Thus there was observed under the microscope the transformation of one substance into another isomeric with it, but having totally different ultra-microscopic characteristics. No clouding or precipitation of the solution occurred.

In decomposing solutions of albumin this author found several kinds of hitherto unknown organisms not visible with the usual illumination. Several of these showed various changes in form and were motile. Surrounding the organisms were seen rainbow colored areas. The movements of the well known motile bacilli could be followed much more readily with the ultra-microscope than in the ordinary hanging drop.

Raehlmann's more recent studies of the blood are interesting. The white corpuscles appear under the microscope as rounded masses made up of a large number of very small confused lines,

each whirling, twisting, weaving in and out and among the others. In order to understand this picture it is necessary to remember that the visibility of objects with the ultra-microscope depends not on the size of the object, but on the intensity of the light, the relative thickness of the object and its refraction index. Large objects, even not sub-microscopic may not be visible because too little light from them enters the eye to affect the retina when examined by lateral illumination. (For these reasons we do not see the usual elements in the white corpuscle.) Small particles seen with the ultra-microscope show the surrounding rainbow-colored halos already mentioned. Sometimes particles are noted whose length is greater than their width; if a number of these short rods and particles lie close together or on top of one another their halos come in contact with one another. If all are in constant motion there results the kaleidoscopic appearance seen in the white cells, due in this instance to the constant movement of submicroscopic, albuminous granules. These movements are seen in fresh leucocytes; in many of them there are also noted comparatively large yellow circles or granules which move here and there across the cell. They give out a light different from the surrounding whirling mass. In pus from inflamed mucous membranes such circles or granules are numerous and cells are found almost completely filled with them. The movement of such granules frequently outlasts that of the protoplasm itself. The movement of the protoplasm ceases when the cell dies, the dead part of the cell frequently becomes dim and sometimes entirely disappears from view.

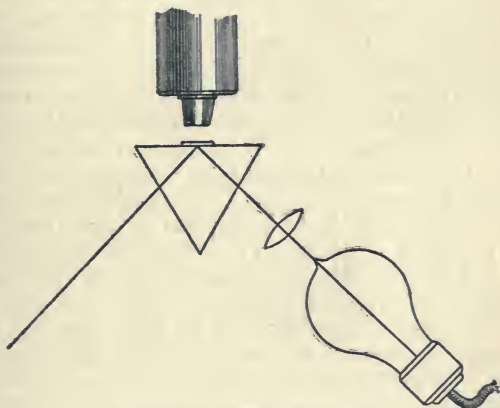
According to Schmidt and Landois nine-tenths of the leucocytes disappear or become dissolved as soon as the blood leaves the vessels. With the ultra-microscope there are found in the blood plasma very numerous protoplasmic bodies of various sizes down to the most minute particles, some of them showing movement and presenting an appearance similar to that of the leucocytes. These may be the remains of the leucocytes which have been partially destroyed. In almost all blood specimens, and especially in purulent exudates, there is a tendency for the white cells and the masses of protoplasm just mentioned to run together and form large masses. This property of living protoplasmic masses which allows them to

unite in free fluid with others perhaps heterogenous, Raehlmann considers may explain regeneration and new growth of tissues and tumors.

In fresh red cells there may be seen a number of small rainbow rings, probably optical phenomena due to the concave surface of the cell. As the cell dies and becomes a shadow circle, it appears under the ultra-microscope as a dim circle not enclosing any of the rainbow rings just referred to, but frequently containing granular areas, so that the cell comes to look like a leucocyte except that no motion is noted in the granular area. In many cases these granular masses shrink and leave the rest of the cell clear. In the clear space left there frequently appear one or more of large yellow granules like those seen in the leucocyte, and they often show movement. Similar forms are also found free in the blood plasma. Beside the red and the white cells the author has also found cellular forms, sometimes only one-quarter the size of a red cell, which he classes with the lymphocytes; they appear as dim circles at times enclosing perfectly dark area, at other times containing a few yellowish particles showing movement. Beside the cellular elements described there are seen in the blood plasma, small microscopic and sub-microscopic particles of a gray or yellow color. The larger ones appear yellow, and the smaller, finer points gray; they are continually in motion, whether the motion is purely Brownian or not is not clear. The yellowish bodies appear in every way similar to the yellow granules seen in the cells. After a while they sink to the bottom of the fluid. The blood then appears to contain numerous small protoplasmic bodies in part derived from the breaking down of white cells and in part from red cells. These particles become visible by virtue of their optical characteristics under the intense illumination, but we can draw no accurate conclusions in regard to their form and structure. Among them are particles only a few millionths of a millimetre in diameter. From these small dimensions up to a diameter of one-quarter of micron when objects become visible by the ordinary microscope there is such an interval that we can conceive of the greatest variety of form and structure as occurring within it. If we suppose that certain of these particles have, as they apparently do, spontaneous movement, although optically they are only points of light they must pos-

sess a complex structure. If we could prove that even the yellow granules mentioned were spontaneously motile, we could believe them to be particles of living matter and Altman's theory that there are elementary organisms, bioblasts, would not seem unreasonable. We may suppose that bacterial poisons and immune bodies, anti-toxins and anti-bodies have close relationship with the ultra-microscopic particles.

Raehlmann's work, as briefly outlined above, includes the more recent applications which have been made of the ultra-microscopic method of study. As now constructed the instruments are large and expensive and have not come into general use.



Apparatus for Lateral Illumination
(after Davis)

Raehlmann's opportunities in the Zeiss laboratory have been exceptional. There have, however, been a number of interesting studies by other workers. Mouton and Cotton (*Comptes Rendus de l'Acad. des Sciences*, 1903, No. 26) have modified the apparatus, using a Nernst lamp as the source of light. A concentrated pencil of light passes through a suitable piece of glass in such a way that the light is totally reflected from the upper surface of a coverslip placed upon it just under the microscope. Any objects placed between the glass and the coverslip become in-

tensely illuminated and can be directly observed. Davis, of Chicago (*Journal of the American Medical Association*, 1904, xlii, 1075) has constructed an instrument on the same principle, but does not consider it entirely satisfactory. He reports observations of colloidal silver and platinum solutions, various animal fluids and microorganisms, especially the peripneumonia organism which is just at the limit of visibility of the highest powers of the ordinary microscope. Seibert (*Beiträge zur experimentellen Therapie*, 1905, No. 10) has obtained ultramicroscopic photographs of various bacteria. V. Behring (*Beiträge zur experimentellen Therapie*, 1905, No. 10) considers that the ultra-microscope may be of value in both qualitative and quantitative albumin determination in the urine. Michaelis (*Deutsche medizinische Wochenschrift*, 1904, xxx, 1534; *Virchow's Archiv*, 1905, clxxix, 195) has studied staining solutions with the ultramicroscope. He divides them into three classes: 1. Those which remain homogeneous no matter how highly diluted. 2. Those which contain numerous particles in suspension even when highly diluted. 3. Those which show a lack of homogeneity, containing some particles in suspension, but not enough to explain the staining properties of the solution. To the first class belong eosin, methylene blue, and others. In the second class are anilin blue, violet black, etc. Dyes of this group stain very intensely. Fuchsin, which belongs to the third group, may be changed to the second by adding anilin and similar substances. This is done in staining for tubercle bacilli. Michaelis does not believe that the ultramicroscope can be used for the quantitative determination of albumin. He studied albumin in blood serum, ascitic fluid and other solutions. In all of these granules were found. In solutions diluted so as to be almost free from granules a new series of granules appeared when the solutions were boiled. He thinks that albumin in complete solution cannot be seen by the ultramicroscope. In studying the red cells of the blood he finds that the granules present in punctate basophilia appear very large on account of the surrounding rainbow rings.

It will be seen that although it is not three years since the ultramicroscope was first described a large number of contributions have been made by Raehlmann and others to the literature regarding its application to various physical and biologic problems. While no very remarkable discoveries have yet been made in this field, the instrument certainly is a valuable addition to our means

of investigation. The peculiar province of ultramicroscopic work is not the study of the ordinary histologic objects nor of the structure of tissues, but of small particles held in suspension in a homogeneous medium. In order that these small particles be seen, it is necessary that there be an optical difference either in color or refraction between them and the medium. The important class of substances known as colloids, both organic and inorganic, may be studied in this way. This includes such substances as toxins, antitoxins, ferments, etc., minute particles have already been found in certain of them. The work of Raehlmann, Gruzewska and Biltz (*Pflüger's Archiv*, 1904, cv.) and others along this line is suggestive and encourages further research. Objects not too small to be seen with the ordinary microscope, but which are not visible on account of their slight refractive properties, can be studied with advantage by this method. It is probable, also, that the ultramicroscope will serve a valuable purpose in study of infectious diseases, the causal organism of which has not been discovered.

ARTHUR T. LAIRD.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, SEPTEMBER, 1905.

Deaths

	1901	1902	1903	1904	1905
Consumption	13	12	16	18	15
Typhoid fever	3	3	3	2	3
Scarlet fever	0	0	0	0	0
Measles	0	0	0	0	0
Whooping-cough	0	1	0	1	1
Diphtheria and croup	2	2	1	1	2
Grippe	0	0	0	0	0
Pneumonia	0	0	0	0	4
Broncho-pneumonia	2	2	2	0	1
Bright's Disease	14	8	12	15	10
Apoplexy	6	9	3	9	6
Cancer	7	10	8	7	13
Accidents and violence	9	6	7	7	20
Deaths over seventy years	15	16	18	30	24
Deaths under one year	25	17	36	25	24
Total deaths	134	126	131	161	153
Death rate	15.77	14.83	15.42	18.94	18.00
Death rate less non-resi- dents	13.18	14.01	14.36	17.53	16.47

Deaths in Institutions.

	1902		1903		1904		1905	
	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.
Albany Hospital	3	4	15	6	6	9	11	6
Albany County Jail.....	0	0	0	0	0	0	0	0
Albany Orphan Asylum.....	0	0	1	0	0	0	0	1
County House	3	2	3	0	1	2	3	1
Homeopathic Hospital	1	1	1	1	1	1	2	1
Hospital for Incurables.....	0	0	1	0	0	1	2	0
House of Good Shepherd.....	0	0	0	0	0	0	0	0
House of Shelter.....	0	0	0	0	0	0	0	0
Friendless Home	0	0	1	0	0	0	0	0
Little Sisters of the Poor.....	0	0	2	0	0	0	7	2
Public Places.....	0	0	0	2	1	2	0	3
St. Francis de Sales Orphan Asylum	0	0	3	0	0	0	0	0
St. Margaret's Home.....	4	0	4	0	1	0	2	2
St. Peter's Hospital.....	4	0	2	0	2	2	2	3
St. Vincent's Male Orphan Asylum	0	0	0	0	0	0	0	0
St. Vincent's Female Orphan Asylum	0	0	0	0	0	0	0	0
Home for Aged Men.....	0	0	0	0	0	0	0	0
Dominican Convent	0	0	0	0	2	0	1	0
Fifth Precinct	0	0	0	0	0	0	1	0
Births								76
Marriages								57
Still Births								2

A considerable increase in the total number of deaths has directed attention to the conditions responsible for them. Aside from consumption and diarrhoeal diseases there has been a diminution rather than an increase in diseases due to specific germs, there having been no deaths from scarlet fever or diphtheria, but one each from typhoid fever, measles and whooping-cough. The increase in deaths from consumption has been eight for the month in comparison with the same month last year, and four in comparison with the same month of 1903. There has been an increase also in four deaths from diarrhoeal diseases over the month of 1904. The greatest increase is in diseases not due to germs. Thus there has been an increase of ten from diseases due to the digestive system, five from diseases due to the kidneys and bladder, three to diseases of the heart and blood vessels, nine to diseases of the brain and nervous system, three to accidents and violence and eight to diseases unclassified. The cause of the increase in deaths must, therefore, be looked for among conditions other than bacterial affections.

Forty-four certificates have been issued to children to permit their employment in manufacturing and mercantile establishments, sixty-nine reinspections have been made among the mercantile establishments of the city. In the Bureau of Plumbing, Drainage and Ventilation it is to be

noticed that a number of plans had been filed for new buildings, which is an indication of activity.

Under the Bureau of Contagious Diseases the most interesting statistics are those in reference to typhoid fever and scarlet fever. There have been six cases of scarlet fever reported during the month with no deaths, and while that is an increase over the cases reported a year ago during the same month, it is believed that the present quarantine will be effective in limiting the spread of the disease. Eighteen cases of typhoid were reported during the month, one less than for the month of September, 1904. Of these eighteen cases eleven were probably contracted outside of the city of Albany and most of them were certainly so contracted. The remaining seven were probably contracted within the city limits and every one of these seven resides in a section of the city supplied through the lower surface, which is unfiltered water drawn from the lake supply. The collective investigation undertaken in the cases of typhoid fever does not in any of these cases seem to point to a source of infection in either the milk or ice supply. While it is true that all the cases presumably contracting the typhoid within the city use ice cut from the Hudson river still it is also true that the same ice was furnished people in other sections of the city in which no cases of typhoid seem to have developed. The water from the lake supply seems, therefore, to be the only constant and probable source of origin of the disease.

PLUMBING INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation there were 311 inspections, of which 228 were of old buildings and eighty-three of new buildings. Fifty-four iron drains were laid and inspected, thirty connections with street sewers, forty-one tile drains laid, two urinals, two latrines, fifty-four cesspools, eighty-three wash basins, eighty-five sinks, seventy-two bath tubs, fifty-eight wash trays, one butler's pantry sink, four trap hopppers in yard, 129 tank closets, one slop hopper, one stable wash stand, one horse trough. One hundred thirty-one permits were issued of which one hundred were for plumbing and thirty-one were for building. Twenty-three plans were submitted, of which seven were of old buildings and sixteen for new buildings. Four houses were tested on complaint, one with blue, red and three with peppermint. There were eight water tests. Twenty-three houses were examined on complaint. There were forty-seven houses re-examined and sixteen cases were found valid and seven were without cause. There were three plumbing violations.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1901	1902	1903	1904	1905
Typhoid Fever	21	8	11	19	18
Scarlet Fever	3	1	11	1	6
Diphtheria and Croup.....	43	33	21	9	7
Chickenpox	0	2	1	3	1
Measles	0	0	4	1	1
Whooping-cough	1	0	1	2	1
Consumption	0	0	1	0	0
Totals	68	44	50	35	34

CONTAGIOUS DISEASE IN RELATION TO PUBLIC SCHOOLS.

Public School No. 6.....	5
Lady of Angels School.....	1
Number of days quarantine for diphtheria:	
Longest..... 29 Shortest.... 3 Average.....	16 2-3
Number of days quarantine for scarlet fever:	
Longest..... 30 Shortest..... 13 Average.....	21 1-2
Fumigations:	
Houses..... 16 Rooms.....	28

ANTITOXIN

Cases of diphtheria reported.....	7
Cases of diphtheria in which antitoxin was used.....	5
Cases in which antitoxin was not used.....	2
Deaths after use of antitoxin.....	0

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR SEPTEMBER, 1905.—Number of new cases, 97; *Classified as follows*: Dispensary patients receiving home treatment, 5; district cases reported by health physicians, 4; charity cases reported by other physicians, 49; patients of limited means, 39; old cases still under treatment, 36; total number of patients under nursing care during the month, 133. *Classification of diseases* (new cases): Medical, 25; surgical, 8; gynæcological, 6; obstetrical work of the Guild—mothers, 20; infants, 19; under professional care; dental, 4; eye and ear, 1; contagious diseases in medical list, 1; transferred to hospitals, 4; deaths, 5.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; attending physicians, 1; medical students in attendance, 2; Guild nurses, 5; patients, 4; number of visits by head obstetrician, 4; by attending obstetricians, 2; by the medical students, 32; by the Guild nurses, 44; total number of visits in this department, 82.

Visits of Guild nurses (all departments): Number of visits with nursing treatment, 869; for professional supervision of convalescents, 219; total number of visits, 1,088. Five graduate nurses and 6 assistant nurses were on duty. Cases were reported to the Guild by 2 of the head physicians and by 32 other physicians and by 2 dentists.

The Albany Guild for the Care of the Sick has through its chairman or the dental committee, Mrs. Wm. MacDonald, sent a letter to physicians calling attention to the Guild's fully equipped dental department. Patients may be sent to the Guild House, Tuesday and Friday from four to five o'clock. If the names and addresses of patients are sent, the nurses will look them up and make appointments.

ALBANY COLLEGE OF PHARMACY.—The current term began on October 2, 1905, with an address by Dr. Willis G. Tucker, dean of the faculty. Short addresses were also given by Professor Huested and Mr. Bradley, secretary of the faculty. The entering class is a large one.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The president of the Society, Dr. Joseph D. Bryant, has issued a circular letter calling attention to the fact that after the consolidation of the Medical Society of the State of New York and the New York State Medical Association all members in good standing of the consolidated body will be entitled to vote on the question of the principles of medical ethics of the American Medical Association when ordered by the court, as provided in section seven of the agreement of the joint committee on conference, as follows:

Section seven: It is further covenanted and agreed by the parties hereto that as soon as practicable after the entry of an order for the consolidation of the corporations, the following proposition shall be submitted by referendum to the vote of the members of the Society, namely:

"The principles of medical ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relations to each other and to the public."

YELLOW FEVER INSTITUTE BULLETIN NUMBER FOURTEEN.—Experimental studies in yellow fever and malaria at Vera Cruz, Mexico, by Doctors Rosenau, Parker, Francis and Beyer, have been issued as the Report of Working Party No. 2, Yellow Fever Institute.

This communication is of great interest at this time because of the universal interest given the New Orleans epidemic. It deals with the supposed causes and difficulties involved in the investigation of the life history and biology of the *Stegomyia fasciata* and *Culex pipiens*. The conclusions drawn by the investigating committee are as follows:

The cause of yellow fever is not known. The infection of yellow fever is in the blood serum early in the disease; no abnormal elements that bear a causal relation to the disease could be distinguished in the serum or in the corpuscles with the best lenses at their command. The period of incubation of yellow fever induced by the bites of infected mosquitoes is usually three days, sometimes five days and in one authentic instance six days and two hours; but when the disease is transmitted by such artificial means as inoculation of blood or blood serum, the period of incubation shows less regularity. It is most active during the day but will bite at night under artificial light. *Stegomyia fasciata* may pass a screen containing 16 strands or 15 meshes to an inch but not one of 20 strands or 19 meshes to an inch. Tobacco smoke produced by burning two pounds per 10,000 cubic feet with an exposure of two hours is sufficient to kill *Stegomyia fasciata*. This method is objectionable on account of the yellow stains and disagreeable odor. Pyrethrum burned in the proportion of one pound per 1,000 cubic feet with an exposure of two hours will stupefy *Stegomyia fasciata*; it requires two pounds to kill them outright. From the limited number of experiments and from previous experiments they consider sulphur dioxide the best of the gaseous insecticides for this purpose. Formaldehyd gas is not an insecticide and therefore not applicable.

THE UNITED STATES CIVIL SERVICE.—The United States Civil Service Commission announces an examination on November 22, 1905, to secure eligibles from which to make certification to fill a vacancy in the position of physician (male), at \$1,000 per annum, San Juan Indian Agency, N. Mex.; another, at \$900 per annum, at Fort Bidwell, Cal., and similar vacancies as they may occur in the Indian Service.

As the Commission has experienced considerable difficulty in securing eligibles for this position, but five having been secured as the result of the examination held on September 13, 1905, qualified persons are urged to enter this examination.

The examination will consist of the subjects mentioned below, weighted as indicated:

1 Letter-writing (the subject-matter on a topic relative to the practice of medicine), 5; 2 Anatomy and physiology (general questions on anatomy and physiology, and histologic or minute anatomy), 15; 3 Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry; the physiologic action and therapeutic uses and doses of drugs), 10; 4 Surgery and surgical pathology (general surgery, surgical diagnosis; the pathology of surgical diseases), 20; 5 General pathology and practice (the symptomatology, etiology, diagnosis, pathology, and treatment of disease), 25; 6 Bacteriology and hygiene (bacteriologic methods, especially those relating to diagnosis; the application of hygienic methods in prophylaxis and treatment), 10; 7 Obstetrics and gynecology (the general practice of obstetrics; diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical), 15.

Seven hours will be allowed for this examination.

Age limit, 25 to 55 years on the date of the examination.

This examination is open to all male citizens of the United States who comply with the requirements.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at the usual places of examination for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will, therefore, arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

THE BENDER HYGIENE LABORATORY.—The following changes in the staff of the laboratory are announced:

DR. KENNETH D. BLACKFAN, (A. M. C., 1905) has been appointed bacteriologist.

DR. H. E. ROBERTSON, (University of Pennsylvania, 1905) has been appointed an assistant in surgical pathology.

DR. LEON K. BALDAUF, (Johns Hopkins University, 1905) has been appointed an assistant in pathology.

PERSONALS.—DR. DOUW L. VANDERZEE, (A. M. C., 1898) has changed his address from Elmira to the State Industrial School, Rochester, N. Y.

—DR. EDWARD C. PODVIN, (A. M. C., 1898) has removed from Johnstown to 184th street and Morris avenue, New York City.

—DR. ARCHIBALD J. DOUGLASS, (A. M. C., 1903), after two years as house physician, Albany Hospital, has started practice in Westfield, Mass.

—DR. DENNIS A. MURPHY, (A. M. C., 1904) is in practice at No. 78 North Main street, Gloversville, N. Y.

—DR. HERBERT B. REECE, (A. M. C., 1905) has been appointed resident physician, Livingston Hospital, New York City, service starting October 1st.

—DR. WM. A. DWYER, (A. M. C., 1905) has been appointed house pathologist, Albany Hospital.

—DR. HUGH M. COX, (A. M. C., 1902) has changed his address to The Iowa, Northwest corner St. Nicholas avenue and 124th street, New York City.

—DR. SHERWOOD LE FEVRE, (A. M. C., 1891) is in practice at No. 19 Oak street, Glens Falls, N. Y., not at Central Bridge as stated in the October ANNALS.

—DR. PERLIA E. GARLOCK, (A. M. C., 1905) is a resident physician at Seton Hospital, New York.

—DR. OSCAR F. LARSON, (A. M. C., 1905) has started practice at Monson, Maine.

—DR. THURMAN A. HULL, (A. M. C., 1905) has been appointed resident physician at the Samaritan Hospital, Troy, N. Y.

—DR. JOHN I. COTTER, (A. M. C., 1904) formerly of Millbrook, N. Y., has removed to Campbell Hall, N. Y.

—DR. SYLVESTER G. CLEMANS, (A. M. C., 1903) has removed from Gloversville, N. Y., to Barre, Vt.

—DR. HAROLD E. HOYT, (A. M. C., 1904) has removed from No. 195 Hamilton street, Albany, N. Y., to Ageuadilla, West Coast, Porto Rico. He goes as a medical missionary under the Presbyterian Board of Home Missions.

—DR. J. P. FABER, (A. M. C., 1905) has left practice at Clarksville, N. Y., to become a medical missionary under the Presbyterian Board of Home Missions. He will be stationed at Porto Rico.

MARRIED.—GILMORE-STUDEMAN.—At Schenectady, N. Y., October 10, 1905, Dr. REID GILMORE, of Schenectady, N. Y., and Miss EMMA C. STUDEMAN, of Schenectady, N. Y. Dr. and Mrs. Gilmore will reside at No. 170 Lafayette street, Schenectady, N. Y.

CULLEN-DYER.—At Watervliet, N. Y., September 6, 1905, Dr. ARCHIE I. CULLEN, (A. M. C., 1903) of Watervliet, N. Y., and Miss GERTRUDE E. DYER, also of Watervliet, N. Y. Dr. and Mrs. Cullen will reside at No. 1445 Broadway, Watervliet, N. Y.

DEATH.—DR. JAMES DUANE FEATHERSTONHAUGH (A. M. C., 1874) died at his home in Cohoes, N. Y., after a long illness, on October 21, 1905.

IN MEMORIAM**WILSON T. BASSETT, M. D.**

Dr. Wilson T. Bassett died at his home in Cooperstown, N. Y., on Tuesday, October 3, 1905. Dr. Bassett was borne in the town of New Lisbon, Otsego county, February 2, 1821, the youngest of three sons of Benjamin and Elizabeth Heughit Bassett. He inherited a sound constitution and was naturally of a studious disposition. His early educational advantages were somewhat limited, consisting of only four months' school in the year from the time he was eight until he was sixteen years old. But he made the most of his opportunities, and at the age of sixteen years he taught a term of school, continuing to teach for four successive winters. During the intervening summers he employed his time in study, spending a part of it in the Clinton Classical Institute, one of the best institutions of learning in the State.

At the age of nineteen he began the study of medicine at the office of Dr. G. W. P. Wheeler of Garrattsville, and at the age of twenty-one took his course of lectures at the Albany Medical College, paying his expenses with the money he had saved from his earnings. He graduated from that institution in the year 1844, and began practice almost immediately at Mt. Vision.

In 1858 he left a large practice in Mt. Vision and went to New York City for a few months to gain a more thorough knowledge of his profession. In 1863 he again returned to that city and took a special course in surgery with Dr. Frank H. Hamilton. In the fall of 1868 he took a special course in the Harvard Medical School, making a special study of the eye and of surgery.

During the civil war Dr. Bassett manifested his patriotism by treating all returning soldiers, and the families of these soldiers while absent in the field, free of charge, and these services were very widely and gratefully accepted. In the spring of 1869 he removed to Cooperstown, that he might have a wider field in which to labor. His practice here was a large one, and embraced many very difficult cases of surgery.

Dr. Bassett is survived by his daughter, Dr. M. Imogene Bassett, who tenderly administered to him in his old age, a daughter, Mrs. M. L. Keyes, formerly of Oneonta, and a son, L. B. Bassett, of Norwich.

For many years Dr. Bassett was a warden of Christ church, Cooperstown. He was a physician for years in attendance upon the "Orphan House of the Holy Savior." Dr. Bassett was a close student and a busy practitioner. He established a wide practice, and was known throughout central New York. In the field of medical jurisprudence and of practical surgery he had few equals. He was called in consultation in every town in Otsego county and into seven other counties. He was frequently called to the witness chair as a medical expert in important trials and his opinion always carried great weight. He performed many of the most difficult surgical operations.

HENRY DARWIN DIDAMA, M. D.

The death of Dr. Henry Darwin Didama occurred at his late home, No. 424 South Salina street, Syracuse, N. Y., on October 4, 1905. He had been in feeble health for months and his death had been expected. Last May he had sustained a severe fall in his office, resulting in a fracture of the hip, and since that time had not left the house, although he made a good recovery from the injury. His constitution was, however, not sufficiently strong to stand the strain. A week before his death he had an attack of syncope and a few days later there was a recurrence. At four o'clock he became unconscious. Dr. Didama was born at Perryville, Madison county, on June 17, 1823, and was therefore eighty-two years of age at the time of his death. Both his father and his grandfather were physicians, and came to America with the Holland company from Delft in the latter part of the eighteenth century, when Dr. Didama's father was only thirteen years of age. The family located at Trenton, in Oneida county. Dr. Didama's mother was Lucinda Gaylord of Connecticut. He remained in the district school near his home until he had mastered the rudiments of a common English education, and then he entered Cazenovia seminary, for three years, teaching in small schools through the winters of 1840 and 1841. He determined to follow the profession of his father and grandfather and in 1842 entered the office of Dr. David A. Moore, of Cazenovia, and later completed his studies with Dr. Nelson C. Powers, of Syracuse. During this time he attended courses of lectures at the Geneva Medical College and at the Albany Medical College, from which latter institution he received a diploma in 1846. He first located at Romulus, in Seneca county, and during his five years of practice there found ample time for study. Before leaving Romulus, Dr. Didama married Miss Sarah Miller, daughter of Sherman Miller, of Tompkins county, and in 1851 he removed with his wife to Syracuse, where he at once took a leading position and became conspicuous in the life of the town. He was appointed recording secretary of the old Onondaga Agricultural Society, which was organized in 1840, and the annual exhibitions of which took place the first week in October and were as popular, comparatively speaking, as the State fair of to-day. Soon after his arrival, Dr. Didama was appointed physician to the Onondaga penitentiary. He was an associate director in the old Franklin Institute, the headquarters of which were located in the Dillaye block in South Salina street. He was also a deacon of the First Ward Presbyterian church, which was located in Washington square and Park street in the early fifties and of which the Rev. Dr. W. W. Newell was pastor. On June 22, 1850, the Syracuse Medical School was organized and Dr. Didama was made a teacher of physiology and pathology. The object of this school was to give students of medicine a more complete and thorough knowledge of their profession than could be obtained in the offices of private practitioners. The association announced that it "would carry on dissection upon human and animal bodies the year round with a manikin and other artificial representations of living structures constantly by their side for detail and comparison." Dr. Didama practiced medicine in the First Ward of Syracuse for twenty years. Through the fifties and early sixties he was twelve

years coroner. As time went on, he discovered that the greater part of his patients lived "down town," and a general demand was made on their part for his location in a more central portion of the city, where he would be more easily accessible in case of need. That was before the days of the telephone and the electric car, and a journey to the First Ward to secure a physician's services seemed to many persons a strenuous undertaking. At that time Salina was practically at a standstill, while Syracuse had begun to increase in population. In 1874, Dr. Didama moved from his home in the First Ward to the house in South Salina street where he died and which had been formerly occupied by Dr. Amos Westcott, once mayor of Syracuse, father of Edward Noyes Westcott, author of "David Harum." After he came to the center of the city to live, Dr. Didama's practice increased materially. He was professor of the science and art of medicine in the Syracuse University Medical College from the time of its organization in 1872 and was its dean emeritus at the time of his death. In 1889 he received the degree of LL. D. from the university, which has in every way delighted to honor and show him reverence. Dr. Didama served as president of the New York State Medical Society and as president of the New York State Medical Association. He served also as vice-president of the American Medical Association and in that capacity delivered the annual address before the society at New Orleans. He has been president of about every medical society of the city, county and State ever organized, has delivered almost countless addresses before such associations and acted as toastmaster year after year at the annual banquets of the Syracuse Medical College and of medical societies. For nearly thirty years he was a member of the British Medical Association and his reputation as a distinguished physician extended to the other side of the Atlantic.

Among the associations with which the doctor was affiliated were the Academy of Medicine, the Onondaga County Medical Society, the Central New York Medical Association, the New York State Medical Society, the New York State Medical Association, the American Medical Association, the American Academy of Medicine, the American Climatological Association and the British Medical Association. He led the movement to unite the New York State Medical Society and the New York State Medical Association, both of which he had served as president.

For several years Dr. Didama was chief of the staff of St. Joseph's hospital to which he had served as visiting physician from the time of its organization. He was a consulting physician of the Hospital of the Good Shepherd and of the consulting staff of the Syracuse Free Dispensary.

In his public addresses and through his private efforts he endeavored to establish a high standard of medical education. He favored early thorough entrance examinations by every medical college in the State and favored the enactment of laws tending to advance the standing of medical graduates. One of his strongest convictions was in regard to the inutility of any form of alcohol for medicinal purposes and he refused to prescribe it under any circumstances whatever, thereby dissenting (often strongly) from most of his brother physicians. On account of



Henry Darwin Sidama M. D.

these pronounced views he was in demand as a lecturer for various temperance organizations and he never hesitated to speak for what he believed to be best for the standing of his profession.

Dr. Didama delivered many lectures and wrote many essays, which have been printed in the most prominent medical journals, and some of which were considered and reviewed by prominent foreign periodicals. He visited Europe several times, and his letters from abroad describing his travels were printed over the signature "Amos Cottle." Under the same signature he discussed for years in the daily press topics of current interest. He was possessed of a strong fund of wit and humor, and his pungent, caustic and witty sayings gave him a reputation as a humorist which he richly deserved.

He was a member of the First Presbyterian church, and in politics a Republican, as he had been since the organization of the party.

His wife died May 1, 1900, having survived all her three children.

Dr. Didama leaves a brother, John E. Didama, of Sheridan, and a sister, Mrs. Marie Annas, of Fredonia; also two nieces, Mrs. Stanley G. Smith, of this city, and Miss Elma Annas, who was his companion and housekeeper for the last four years of his life.

JAMES HENRY SALISBURY, M. D.

Dr. James Henry Salisbury, a graduate of the Albany Medical College of the class of 1850, and widely known for his original investigations in microscopy, died at his country home at Dobb's Ferry, N. Y., August 23, 1905. Dr. Salisbury was born at "Evergreen Terrace," Scott, Cortland county, N. Y., October 13, 1823, and was the second son of Nathan Salisbury and Lucretia A. Babcock. He received his early education at the Homer Academy, then presided over by the justly celebrated Prof. Samuel Woolworth, who for many years was secretary of the Board of Regents of the University of the State of New York. He received the degree of Bachelor of Natural Sciences (B. N. S.) at the Polytechnic Institute of Troy, N. Y., in 1846, and that of Master of Arts from Union College in 1852. He had been appointed assistant under Prof. Ebenezer Emmons, in the chemical department of the Geological Survey of the State of New York, which place he filled until January 1, 1849, when he was made principal. He remained principal, with his brother, Charles B., as assistant, until 1852. He was elected a member of the American Association for the Advancement of Science in 1848, and the same year was also made a member of the Albany Institute. In 1853 he was elected corresponding member of the Natural History Society of Montreal. In 1878 he was chosen president of the Institute of Micrology. In 1857 he was elected member of the American Antiquarian Society, and in 1876 he was made vice-president of the Western Reserve Historical Society. In 1879 he was elected a member of the Philosophical Society of Great Britain. In 1848 Dr. Salisbury received the prize gold medal from the Young Men's Association of Albany, for the best essay on the "Anatomy and Histology

of Plants." In 1849 he won the prize of three hundred dollars offered by the New York State Agricultural Society for the best essay on "The Chemical and Physiological Examinations of the Maize Plant, during the Various Stages of its Growth." This made a work of over two hundred pages, and was published in the *New York Agricultural Reports* for 1849, and subsequently copied entire in the *State Agricultural Reports* of Ohio. In 1851 and 1852 he gave two courses in lectures on "Elementary and Applied Chemistry" in the New York State Normal School. He also conducted a series of experiments on different subjects which were embodied in several papers read before the American Association for the Advancement of Science, in 1851, and were published in their transactions, and also in the *New York Journal of Medicine* of a later date. While in charge of the State Laboratory of New York from 1849 to 1852 he was constantly engaged in chemical and medical investigations, the results of many of them being published in the *Transactions of the American Association for the Advancement of Science*, in the *State Geological and Agricultural Reports*, and in the various scientific and medical journals of that period. In 1849 he began his studies of Microscopic Medicine, in which he has been so successful. He has persevered in these studies, with scarcely any intermission, devoting much of his time daily to microscopic investigations. In 1858 he became the student of "Healthy and Unhealthy Alimentation," and the influence the latter has in producing the various chronic diseases. He began investigations into the germ theory as early as 1849, and in 1860 took up a series of studies on the origin of the blood. He embodied these researches in a paper published in the *American Journal of the Medical Sciences* in April, 1866. The extended labors of himself and his brother, C. B. Salisbury, on the "Ancient Earth and Rock-writing" of this country, in connection with the earth and rock works of the ancient mound builders have been embodied in a large quarto volume with thirty-nine plates, which is in the hands of the American Antiquarian Society. In January, 1864, Dr. Salisbury went to Cleveland to assist in starting the "Charity Hospital Medical College." He gave to this institution two courses of lectures in 1864-5 and 1865-6 on physiology, histology, and the microscope in disease. A list of Salisbury's works published between 1847 and 1865 exhibits no less than seventy-five volumes and pamphlets on a great variety of abstruse medical subjects, among them the following bound books: "Relation of Alimentation and Disease," 332 pages, royal octavo, 19 full page plates; "Malaria," McNaughton's Prize Essay, Albany Medical College Alumni Association, ten plates, 152 pages, octavo; "Microscopic Examination of Blood found in Variola and Typhoid Fever," seven plates, 65 pages, octavo; "Original Investigations in Diphtheria and Scarlet Fever," seven full page plates, 31 pages, octavo. Dr. Salisbury was married on the 26th day of June, 1860, to Clara Brasee, daughter of Hon. John T. Brasee, of Lancaster, Ohio. She was born April 26, 1839. He is survived by the widow and a daughter, Mrs. W. G. Pollock, of Cleveland, O., and Dr. Trafford B. Salisbury, of New York city. Interment was in Lake View Cemetery, Cleveland, O.

JOSEPH LANGFORD WEVER, M. D.

Dr. Joseph Langford Wever, a pioneer of Leavenworth, Kansas, prominent in educational matters in the city, and State surgeon in the army during the civil war, died peacefully at his home in Leavenworth, September 11, 1905, of weakness attendant upon extreme age, after an illness extending over more than a year.

Dr. Wever was born October 16, 1824, at the village of Garoga, near Johnston, Fulton county, New York, in the famous valley where General Herkimer and his forces played their tragic role during the Revolution. Receiving the rudiments of his education in the common schools of Garoga, the young man finished at the Cazenovia seminary, going from there to the Albany Medical school, and from there to the New York City College of Physicians and Surgeons, now Columbia University. He received the degree of doctor of medicine from the Albany Medical College in 1852. He first practiced medicine under his father, a practitioner before him, at his native village, where he married in 1851.

Independently he practiced in Rhode Island for a time, but in 1859 left for Kansas, the cynosure of the nation's eyes in those days. Early in the fall of 1859 he landed from a steamer in Leavenworth. Mrs. Wever followed him a few months later.

From the outset of his residence Dr. Wever became prominently associated with public affairs, particularly with free public education. He was a member of the first school boards and a prominent mover for the erection of the first school houses to go up in the prospective metropolis of the west. The first was built under his personal supervision.

At the outbreak of the war Dr. Wever was made surgeon of the Seventh Kansas regiment, serving for three years. On his return he was again made a member of the school board, soon being elected president and serving more than twenty years.

Dr. Wever was among the earliest regents of Kansas University, serving a number of terms and when the Soldiers' home was built seventeen years ago became its first chief surgeon under Governor Smith. Dr. Wever also was a prominent Mason, a Knight Templar and was generally well known in the order.

One of the works in which Dr. Wever took great pride was the Mount Muncie cemetery, the city's most beautiful burial ground. He had been superintendent of the place since 1872, had managed its general affairs, brought about the vast improvements to this greatly advanced churchyard and had been the moving spirit in the enterprise. The extraordinary excellence of the cemetery where his own remains will rest will be a lasting monument to Dr. Wever.

The surviving members of the family are: Mrs. Nancie Jane Wever; sons, Robert L., of Seattle; Joseph C., of Los Angeles, and John S., of this city; daughters, Mrs. McCracken of Fairfield, Ill., and Miss Jeanette Weaver.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The National Standard Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with numerous references to other Foreign Pharmacopœias. In accordance with the New United States Pharmacopœia, 1905, and by authority of the Convention. By HOBART AMORY HARE, B. Sc., M. D., Professor of Therapeutics in the Jefferson Medical College, Philadelphia, Member of the Committee of Revision of the U. S. P.; CHARLES CASPARI, JR., Ph. G., Phar. D., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, Member of the Committee of Revision of the U. S. P.; and HENRY H. RUSBY, M. D., Professor of Botany and Materia Medica in the New York College of Pharmacy, Member of the Committee of Revision of the U. S. P., with valuable assistance from EDWARD KREMERS, Ph. D., DANIEL BASE, Ph. D., and JOSEPH F. GEISLER, Ph. C. Imperial octavo, 1858 pages, 178 engravings. Cloth, \$7.25. Lea Brothers & Co., New York and Philadelphia.

This Dispensatory takes the place of the National Dispensatory of Stillé and Maisch.

In addition to the articles in the United States Pharmacopœia, it contains many unofficial drugs of more or less importance.

The work is intended to (and certainly does in a most admirable way) supplement the Eighth Decennial Revision of the United States Pharmacopœia, containing the natural history, chemistry, pharmacognosy, physiological action and therapeutic uses of medicines, together with the doses. The illustrations are a very valuable adjunct to the text and are remarkably accurate.

The announcement of the publishers, which follows, is a faithful and not at all overdrawn description of the work:

"To practitioners of medicine and pharmacy this new work of the highest authority is of great importance. Published on the date officially fixed for the new U. S. Pharmacopœia to go into effect, it contains by the authorization of the U. S. P. Convention every article in the new Pharmacopœia, together with explanatory notes and instructions necessary to a full understanding of the brief official statements. In addition, it covers the essentials of the latest foreign pharmacopœias, and the very important domain of unofficial drugs and preparations so largely in use. Of its authors, Prof. Rusby has treated the department of Pharmacognosy, including the minor as well as the major drugs of the entire globe, a service never before rendered; Prof. Caspary deals with Pharmacy, giving full information regarding methods and products, with descriptions and explanations of the most approved apparatus and tests, and Dr. Hare has written the sections on Medical Action and Uses, giving a direct and

compact presentation of modern therapeutics. An Appendix of 60 pages contains all necessary tables, formulas, tests, etc., for practical use. The General Index, of about 90 pages, contains full references to every name in the text, making it a repertory of the world's knowledge of drugs, and the Therapeutical Index, of about 40 pages, contains, under the name of each disease, references to all the medicines employed in its treatment leading the reader to the points in the text where the conditions calling for its employment will be found. In a word, The National Standard Dispensatory is a new, practical and authoritative work containing information on all substances used in medicine and pharmacy at the present day."

S. L. D.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By WILLIAM OSLER, M. D., Fellow of the Royal Society; Fellow of the Royal College of Physicians; Regius Professor of Medicine, Oxford University; Honorary Professor of Medicine, Johns Hopkins University, Baltimore; formerly Professor of the Institutes of Medicine, McGill University, Montreal, and Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia. Sixth Edition. Thoroughly Revised. From New Plates. New York and London. D. Appleton & Company, 1905.

This is by far the best text-book on the practice of medicine in the English language. Its spirit is thoroughly scientific. It contains all the results of the most recent and the most accurate investigations in the various departments of medicine in a condensed form and yet set forth in such a clear and beautiful literary style that it is easily comprehended by the ordinary medical student; while the older practitioner turns to it for authoritative utterances upon the latest facts. Indeed it may truly be said to be, in a medical sense, "all things to all men." So true is this and so excellent is its section on nervous diseases that for many years it was recommended to the students of the Albany Medical College as a text-book on nervous diseases. That the book may be to future generations in medicine the light, the guide and the inspiration that it has been to the present is the wish of its countless readers.

Manual of Diseases of the Eye. For students and general practitioners. By CHARLES H. MAY, M. D., Chief of Clinics and Instructor in Ophthalmology, College of Physicians and Surgeons, Columbia University, etc. Fourth edition, revised. William Wood & Company, New York, 1905.

This popular work has been rewritten, type reset and numerous illustrations added. There is no small book on ophthalmology that can compare with it in value to the physician who has had limited experience in eye practice. The text concisely describes conditions which are demonstrated by beautifully realistic color photographs of the external

diseases of the eye. Internal disorders are also reproduced on plates retaining normal color and relations.

The last chapter describes the best of the late therapeutic aids, including new drugs and appliances.

The book is most heartily recommended.

A. J. BEDELL.

Diet of Health and Disease. By JULIUS FRIEDENWALD, M. D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RURA, M. D., Clinical Professor in the College of Physicians and Surgeons, Baltimore. Philadelphia—New York—London. W. B. Saunders and Company, 1905.

The first two hundred and seventy-six pages of this book are devoted to Diet in Health. In them are included: First, brief statements concerning the chemistry and physiology of digestion; then, under the caption "Digestion and Absorption," after first explaining the character and action of the various enzymes, the different types of digestion are considered, commencing with salivary digestion and ending with bacterial changes. This is followed by a concise explanation of absorption together with a reference, this latter all too brief, to the peculiarities of digestion in infants. Under Metabolism is included vegetarian diet, milk diet, fasting, and the influence of drugs on metabolism. The portion of this section entitled "Quantity of Food Required," consists largely of tables taken from the writings of Hutchinson and Atwater. The influence of various factors on digestion are reviewed and the authors state their belief that the use of tobacco is frequently an aid to digestion. In discussing animal and vegetable foods not only is their composition considered, but tables are inserted showing their fuel value and their total nutrients. Fruits and nuts, fungi, algae and lichens, sugars, spices and condiments, fats and oils, and salts are studied in the same manner and the authors incidentally pay their compliments to vegetarians and the advocates of an exclusive nut diet. Water as a beverage is gone into very thoroughly and the different classes of mineral waters touched upon. Other beverages discussed are tea, coffee, cocoa and alcohol. In considering the latter, Prof. Atwater's experiments are frequently referred to and the good as well as the evil effects and the best way to use it are touched upon. Concentration of food, artificial food preparations, effect of cooking, diseases caused by errors in diet and various food poisons, food adulteration, diet as a means of diagnosis, and diet during athletic training occupy but forty-six pages, their value therefore, as may readily be seen is not as great as could be desired. On the other hand the part devoted to infant feeding is all that can be asked for, embodying the same formulæ that are to be found in Rotch and Holt. The section closes with a short consideration of rectal feeding.

Diet in Disease is a section of two hundred and eighteen pages. This is by far the best part of the book and gives many valuable directions and much information for the busy practitioner.

Diseases in which Diet is a Primary Factor naturally follows; then comes Special Cures; Army and Navy Rations; Prison and Hospital Dietaries and many Sick Room Recipes.

Not the least valuable part of the book (for those who do not happen to possess Bulletin No. 28 of the Experiment Stations of the Department of Agriculture of the United States), is that which is called Chemical Composition of American Food Materials, which part practically ends the book.

As a whole this book cannot be too highly commended as in it are gathered together statistics and various valuable data on diet and on foods which can not be available to the general practitioner and added to this are the opinions of the men best qualified to write on such subjects.

S. L. D.

Saunders' Pocket Medical Formulary. With an Appendix containing Posological Table; Formulæ and Doses for Hypodermic Medication; Poisons and their Antidotes; Diameters of the Female Pelvis and Fœtal Head; Obstetrical Table; Diet List for Various Diseases; Materials and Drugs used in Antiseptic Surgery; Treatment of Asphyxia from Drowning; Surgical Remembrancer; Tables of Incompatibles; Eruptive Fevers; Weights and Measures, etc. By WILLIAM M. POWELL, M. D., Author of "Essentials of Diseases of Children;" Member of the Philadelphia Pathological Society, etc. Seventh Edition, thoroughly revised and enlarged. Philadelphia and London, W. B. Saunders & Company, 1905.

About all that can be said, for or against this book, is contained in the foregoing description. It should occupy, from a scientific standpoint, a place of the same importance in the library of the practitioner that the "Quiz Compend" should in that of the student; that is, the value of each depends entirely on the ignorance and laziness of its reader. It contains formulæ for the cure of everything from "abortion" to "yellow fever," 231 pages of them, and the doses of various drugs are given in both the "French" (?) and Apothecaries' systems; it lets one know at what ages the eruption of the teeth should take place and just what to do in asphyxia from drowning, together with various other things as indicated on the title page.

It is, taking it altogether, a work that no physician with a faulty education, a poor memory and an aversion for work can afford to be without.

S. L. D.

SURGERY

Edited by A. Vander Veer, M. D. and Arthur W. Elting, M. D.

Concerning the Nature and Cause of the Haemolysis which Occurs after Extensive Burns. (Ueber Art und Ursache der nach ausgedehnten Verbrennungen auf tretenden hämolytischen Erscheinungen.)

BURKHARDT. *Archiv für klinische Chirurgie*, LXXV Band, 4 Heft.

In spite of a great deal of experimental and clinical investigation there is no satisfactory explanation of the exact cause of death after severe burns. In general there have been three hypotheses advanced to explain

death—first, shock acting mainly upon the nervous system; second, the changes in the blood, and third, the toxæmia.

All authors are agreed upon the changes in the blood after burns, characterized by the destruction of considerable numbers of red corpuscles and the escape of haemoglobin so that haemoglobinuria results. Ponfick and Klebs assume that these changes are due to the direct action of heat upon the blood. Lesser believes that the cause of death is the destruction of the function of the red corpuscles. Still others believe that as the result of the destruction of the red corpuscles thrombi and emboli occur and that these are the cause of death.

The pathological changes in the red corpuscles reach their maximum within the first twelve hours after the burn. It is a well known fact that haemoglobinuria does not always occur even after most severe and extensive burns. Certain adherents of Ehrlich's school have maintained that the haemolysis was due to a specific toxine formed as the result of burns. Dieterich has claimed to have demonstrated the presence of this specific haemolysin in the blood of animals experimentally burned. He also claims to have demonstrated the constant occurrence of agglutination of the blood of individuals who have been burned.

With a view to the confirmation or disproof of these observations the writer undertook an extended series of experiments performed mainly upon rabbits. As a result of these experiments he has shown conclusively that it is impossible to demonstrate in the blood or any of its component parts taken from animals subjected to burns the presence of any specific haemolysin, and he is unable to explain the results claimed to have been obtained by Dieterich. He has also shown conclusively that the mechanical effect of warming the blood to a certain temperature will produce destruction and haemolysis of the corpuscles. This begins at about fifty degrees centigrade and is most marked at sixty degrees. Higher temperatures produce a thickening of the blood with a complete destruction of the corpuscles. He also performed a series of experiments to demonstrate how much the temperature of the blood of the veins in the burned part was affected by the heat which produced the burn. He found that as a rule the temperature of this blood was eight to ten degrees lower than that of the temperature of the water with which the burn was produced. Experiments with these temperatures suffice to produce more or less destruction of the red corpuscles and escape of the haemoglobin. He believes that the emboli are a secondary occurrence resulting from the destruction of red corpuscles. He therefore believes that auto-haemolysins are not developed after burns, that a toxic action upon blood does not occur and cannot be assumed as the cause of death. He believes that the blood changes observed are usually due to the mechanical action of the heat which results not only in the disappearance of the red corpuscles but also produces more or less of a lesion of the limiting membrane of the corpuscle which allows the escape of the haemoglobin without solution of the corpuscle. He suggests the possibility of the production of other toxic substances in other tissues of the body after burns although there is no definite proof of this. He believes, however, that an attempt should be made to demonstrate whether or not cyto-toxins are produced after burns.

Concerning Late Rickets (Ueber Rachitis tarda.)

HANS CURSCHMANN. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, XIV Band, 3 Heft.

The question as to whether late rickets can really be considered as a form of true rickets has been very much disputed. Many of the students of early rickets have denied its existence, while many surgeons have insisted that it really occurred. The writer reports the case of a young girl in whose family rickets had occurred but who had herself never had any of the signs of early rickets. About the fourteenth year she ceased to grow without any symptoms of disturbance of the bone. In the seventeenth year, within three months, there developed a marked change in the bony skeleton of the trunk and extremities, associated with pain and disturbance of locomotion. A rickety rosary developed, as did a typical rachitic flat pelvis, with a marked enlargement of the epiphyses of the upper and lower extremity, together with more or less marked bending of the long bones. There was no disturbance of the bones of the skull or of the teeth. There was only a slight dorsal scoliosis.

Under treatment, which consisted of rest in bed, phosphorus and salt baths, the process was arrested within about three months and some of the disturbance receded somewhat.

The writer believes that the most important question in the differential diagnosis of this case is as to whether it may have been a case of osteomalacia. He points out, however, that practically all of the important features of this case are not the features of osteomalacia, but are the features of rickets. The radiographs seemed to confirm this latter view.

As to the etiology of the condition practically nothing is known, as only comparatively few cases have been reported. Over-exertion, which some of the writers have assumed, may determine the localization of the process, but does not explain the etiology. As to the age, it usually occurs about the time of puberty—in most of the cases reported, from the fifteenth to the twentieth year, in a few, from the ninth to the twelfth year.

The question as to whether the late rickets may not be a recurrence of early rickets can be excluded in most of the cases reported. The especial predisposition of puberty to the development of late rickets can be explained upon the basis of the more rapid growth and the increase of ossification at this time in a fashion quite analogous to that which occurs during the infantile period of development.

The symptomatology is rather characteristic. The first subjective and objective symptoms appear in the legs, and are characterized by stiffness, with pains in the muscles and about the joints. The gait at first may suggest that of hip joint disease. Enlargement of the epiphyses and bending of the shaft of the long bones soon develop. The arch of the foot becomes flattened. These symptoms do not develop symmetrically, but appear to be more marked in one leg than in the other. The muscles present the condition of hypertonicity. The patient frequently shows a diminution in height. Changes in the spine are very slight, and if present are usually confined to scoliosis. The changes in the pelvis are quite characteristic and present the features of the usual

flat pelvis of rickets. The thorax presents little or no deformity, aside from the rachitic rosary. The skull and the teeth show practically no change. The other disturbances associated with early rickets are practically never seen in late rickets.

The treatment consists of rest in bed for some weeks or months, phosphorus, salt baths, and good food. Mikulicz has called attention to the fact that the so-called idiopathic genu valgum adolescentium is usually of a rachitic character and is only a part of a late rickets.

Indurative Pancreatitis. (Ueber indurative Pankreatitis.)

BARTH. *Archiv für klinische Chirurgie*, LXXIV Band, 2 Heft.

There is no longer any doubt that chronic interstitial inflammation of the pancreas results relatively frequently from an infection of the common bile duct and that this condition often gives rise to definite clinical symptoms. Mayo Robson has reported twenty-four cases of this character upon which he has operated. The symptom-complex of the disease is in no way characteristic and the diagnosis is very often not made. The writer reports a case which presented the usual symptoms of a cholecystitis, presumably due to stone. At operation the diagnosis of cholecystitis was confirmed but no stone was found. The gall-bladder was drained and the patient did extremely well for a time thereafter. subsequently however the pain returned and became almost unbearable. There was no fever and no evidence of any disturbance of the gall passages. A second operation was performed two and one-half months after the first and at this time marked changes were found in the pancreas, the head and neck of which were very hard and thickened although the tail showed relatively slight changes. There was no definite disturbance of the tissues around the organ. Under the belief that the case was one of carcinoma of the pancreas, a small bit was excised and the wound in the pancreas closed with cat gut. The patient died sixteen days after the operation from infection.

At autopsy the duct of Wirsung was found to be completely obliterated and the duct of Santorini was patulous; the wall was somewhat thickened. The bile passages were normal. There were no other associated lesions. Microscopically there was found to be a marked destruction of the glandular tissue in the head and neck associated with a decided increase and infiltration of the interstitial tissue. The Islands of Langerhans did not appear to be affected, which probably explains the reason why there was no sugar in the urine of the patient. The writer believed the pain to be entirely due to a chronic inflammation of the pancreas, very likely caused by infection which primarily developed in the gall-bladder. Such conditions as this developing without the presence of stone in the gall-bladder have been observed by others. The writer suggests that the severe pain in this case might be due either to a direct disturbance of the solar plexus or a neuritis of the pancreatic branches of the same. This would also serve to explain the nausea and vomiting. It also appears that in certain cases simple exploratory laparotomy with

palpation of the swollen gland may have some influence upon the pain and lead to an improvement of the same, for in no other way can the improvement which has followed certain operations of this character be explained.

It would appear to be desirable in cases of protracted icterus in which at operation a questionable tumor of the head of the pancreas is found to drain the gall-bladder either by cholecystomy or a cholecystenterostomy. It would appear that a relief of the stasis of the bile exercises a favorable influence on the infection of the pancreatic duct as well as the inflammation of the pancreas itself.

Report of Fifty Cases of Appendicitis and Fifty Cases of Hernia, with Reference to Albuminuria.

F. E. BUNTS. *American Journal of Medical Sciences*, 1905, CXXIX, 438.

The author refers to a paper read by Dr. John C. Monroe before the American Surgical Association in 1893, in which the statement is made that in a surgical ward thirty-five per cent of the patients showed signs of renal trouble, and which concludes with these words: "The mere presence of a trace of albumin, with or without hyaline and glandular casts, unattended by other evidence of renal damage, should not influence the prognosis in surgical disease or operation; and furthermore albumin and casts alone are apparently no contra-indication to the administration of ether."

Dr. Bunts summarizes the 100 cases included in his report in the following manner: Appendicitis, fifty cases; of these, forty-three were operated upon during the attack, and seven between attacks, with two deaths. Examination of the urine showed albumin present in eighteen cases previous to operation, disappearing after operation in five cases. Twenty patients who had previously been free from albuminuria developed it subsequent to operation, making a total of thirty-three in whom it was present subsequent to operation. Hernia (non-inflammatory), fifty cases; no deaths; of these, eleven showed albumin in the urine before operation, disappearing after operation in but two cases. Eleven new cases of albuminuria developed subsequent to operation, making a total of twenty in whom it was then present.

Thus, of the inflammatory cases thirty-six per cent. had albumin before operation, while of the non-inflammatory cases but twenty-two per cent. had albumin. Of the former the albumin disappeared in twenty-eight per cent. after operation, while in the latter, it disappeared in eighteen per cent. Judging from these cases it would seem that intraperitoneal inflammation is accompanied by the appearance of albumin in the urine in about eighteen per cent. of cases; that operations in this class cause the development of albuminuria in about forty per cent. of new cases, and an improvement or disappearance of albuminuria in ten per cent.

In the non-inflammatory class, operations were followed by the development of new cases of albuminuria in but eighteen per cent, and of

disappearance of albumin in but four per cent. The smaller percentage cured by operation in the latter group suggests that the presence of albumin in non-inflammatory cases is more liable to be a permanent condition than in inflammatory cases.

No systematic record was kept of the condition of the urine at the time patients left the hospital, but from records of a few scattered cases the author is of the opinion that a large number of them ultimately showed no trace of kidney disturbance. He admits that statistics are meagre but thinks they are sufficient to emphasize the fact that albumin is found in a very large percentage of surgical cases; and that it cannot on any ground yet established be considered a positive indication to operation.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Mesotan in the Treatment of Rheumatism and Allied States.

Major C. F. KIEFFER, U. S. A. *Special Report to the Surgeon General. Therapeutic Gazette, March 15, 1905.*

It was proven in 1876 by Dresche of Vienna that absorption took place after the external application of alcoholic or watery solutions of salicylic acid, it appearing later in the blood as salicylate of soda. In 1883 Unna demonstrated the absorption of salicylic acid through the unbroken skin and a year later Hasenfeld introduced enough of the drug in this way to produce tinnitus and other toxic symptoms and in 1893 Bourget recommended its use in the form of an ointment for rheumatism. The oil of wintergreen has long been popular in this country for the same purpose but its unpleasant odor is a great drawback.

Mesotan is a synthetic compound and was evolved in the search for a salicylic acid ester which should not have the odor of gaultheria (methyl-ester of salicylic acid). The attempt was made to replace the methyl ester by the ester of the higher homologous alcohols. Because, as Dreser remarks, the higher one of these homologues boils, the lower is the pressure evolved at ordinary temperatures, and, other things being equal, the less pronounced is its odor. Mesotan is the methyl-oxy-methyl ester of salicylic acid. It is a clear, yellowish, oily liquid with a pronounced ethereal but not unpleasant odor. It is formed by the action of formaldehyde, methyl alcohol, and hydrochloric acid on sodium salicylate. It contains, approximately, seventy-one per cent. of salicylic acid, is sparingly soluble in water, but more freely in oils. The methyl ester will be taken up in oils 2070 times as much as in water; mesotan, on the other hand, only 56 times as much or one-thirty-seventh of the affinity for fats as the oil of gaultheria. It is argued from this that mesotan should have a distinct advantage, clinically, in cases where the skin contains a heavy layer of fat; since the body fats will not absorb it to the extent that they would the oil of gaultheria, but would release it to the deeper tissues, the muscles, and the fasciae. Mesotan is saponified readily by weak alkalis.

Mesotan, while having a general effect, has a still more marked local

action producing an analgesic effect on a painful area if applied to the overlying skin and lightly covered with a linen or muslin protective dressing. No increase in its activity is observed if covered with oiled silk or if vigorously rubbed in as advised by Ruhemann. This rubbing is apt to occasion a troublesome dermatitis. Skin symptoms may be avoided by mixing the mesotan with an equal part of olive oil. A weaker proportion (twenty per cent.) is sufficient in mild cases. Benzoated lard may be substituted and castor oil or glycerine may be used and have been recommended in cases where the odor of the olive oil is not well tolerated. For sharp nerve or inflammatory pains the pure drug is preferable, applied over the painful area. For dull, aching pains, as in subacute muscular or aponeurotic rheumatism, the weaker dilutions are better and the effect is slightly prolonged. Usually the drug should be applied two or three times daily. So applied, mesotan is rapidly absorbed, the salicylic reaction appearing in the urine in from thirty to sixty minutes, never longer than the latter. The rate of absorption differs in different individuals and in different parts of the body in the same person. The absorption in thin skinned, lean persons is rapid, while in men with heavy, greasy skin and cutaneous and subcutaneous fat, it is delayed. It is more rapid when applied to flexor than to extensor surfaces, quicker in action when applied to the trunk than when applied to the extremities. It takes about twice as long for the reaction to appear when mesotan is applied to the skin as when salicylic acid is taken by the mouth. It seems to have no untoward effects and although systemically absorbed in large quantities has no effect on the stomach or digestion. Occasionally a slight ringing in the ears is complained of in susceptible individuals. The first effect of the application of mesotan is a feeling of slight warmth and tingling, amounting in a few cases to a burning sensation like that produced by a mustard plaster. Vigorous rubbing in of the drug accentuated the burning sensation, particularly when applied to the inner sides of the arms or thighs or the abdomen or groins. The feeling of warmth and tingling is succeeded by a pleasant glow in the parts and the rather rapid disappearance of pain. Occasional trivial skin eruptions are observed, ranging from an insignificant vesication to such cases as are reported by Ruhemann, in which the lesions resembled a vesicular eczema and were quite severe. With the exception of two cases (reported by Pollitzer), the eruption was local and confined to the area of the application of the drug. In one of Pollitzer's cases a fifty per cent. mixture was applied to the elbow and "a vesicular crusted dermatitis" developed which extended over both arms, the abdomen, and both thighs. In the second case a general vesicular eruption followed the application of the drug, full strength. Three cases of severe bullous dermatitis are reported from Naunyn's clinic and Frankenberg reports one severe case with superficial gangrene. Korach reports a case of general dermatitis with numerous military, watery vesicles, much itching and requiring two months to heal. Kieffer has noted no cases of general exanthem. In all his cases the local eruption was insignificant and required but three or four days to disappear. To prevent the skin symptoms the following precautions should be observed: Never use stronger than a fifty per

cent. dilution until the susceptibility of the patient has been ascertained; use no friction in making the application; use no impervious covering after the application of the mesotan; in general, on exposed parts of the body, such as the hands, wrists and neck a light covering of gauze may be applied while for other parts of the body the pajamas or bedclothing are sufficient. Further, do not continue the application of the drug over too long a period to the same area but choose adjacent spots.

Kieffer reports twenty-two cases of acute articular rheumatism treated with mesotan and he describes the effect as marvelous. One case was admitted with severe involvement of both wrists, both elbows, and both shoulders, temperature 104.8°. Twelve grammes of the pure drug were applied to these joints in the morning and evening of the first and second days. The pain disappeared in twenty-four hours completely and the temperature reached normal in forty-eight hours. Slight recurrences of pain in the joints for seven days following were controlled by one application daily of forty per cent. mesotan. Several very similar cases are cited. Very marked results were obtained in acute cases with involvement of the costal and vertebral articulations, entirely relieving the severe pain occasioned by breathing. In four cases of mono arthritis of a gonorrhoeal origin the remedy was of no service. Four cases of subacute and chronic articular rheumatism were treated, two being permanently and quickly relieved; another required one application daily to obtain relief; and in the fourth there was only a transient analgesic effect, a tolerance seeming to be soon established. In muscular rheumatism and rheumatism of the fasciae and aponeuroses the results were very satisfactory, especially in well developed muscles with thin fascial coverings. In acute torticollis and lumbago good results were obtained. Excellent results were noted in a case of rheumatic iritis, the mesotan being applied to the brow and temples. A few cases of neuritis and trigeminal neuralgia were benefited by its use but no good results were had in sciatica. In three cases of arthritis deformans there was a notable relief from pain.

The only remedial value of mesotan is that of the salicylates but while salicylic acid by the mouth has only a systemic effect, mesotan has a direct local effect as well. It is of use alone or in connection with salicylic acid internally. Its use is limited to the purely rheumatic affections and some few diseases of the serous structures. It has none of the toxic effects of salicylic acid or the salicylates administered internally. Its one untoward action is the tendency to produce local or general dermatitis, which with care may be easily avoided.

The Absorption of Mercurial Ointments.

FEDTSCHENKO. *Wiener klinischer therapeutische Wochenschrift*, April 10, 1904.

One hundred and fifty careful observations were made for the purpose of determining what base most favored the absorption of mercury. In each experiment the ointment contained thirty-three and one-third per

cent of mercury and from 4.6 to 6.5 grammes were used, rubbed into the skin for thirty minutes.

Blue ointment (old), 29 per cent. of mercury was absorbed.

Lanolin ointment, 24 per cent. of mercury was absorbed.

Mercurial soap, 27 per cent. of mercury was absorbed.

Mollinum ointment, 33 per cent. of mercury was absorbed.

Resorcin ointment, 49 per cent. of mercury was absorbed.

Vasogen ointment, 44 per cent. of mercury was absorbed.

Of mercurial ointment he found that it is much more rapidly absorbed when old than when fresh. The rate of absorption varies much with the part to which it is applied, for instance being much more rapidly taken up by the skin of the leg than by that of the thigh. When the length of treatment was increased to sixty minutes the absorption was increased by from eight per cent. to twelve per cent. but the irritation to the skin was also very greatly increased. If the treatment was for only fifteen minutes the amount of mercury absorbed was much less, frequently as little as one-half. The more frequently the same area was used the greater its power of absorption. Frequent bathing, warmth and massage all increased the rate of absorption as well as the amount of mercury absorbed.

Experiences with the Treatment of Scarlet Fever by Antistreptococcic Serum. (Erfahrungen Ueber die Behandlung des Scharlachs mit Antistreptococcenserum.)

LUDWIG MENDELSON. *Deutsche medicinische Wochenschrift*, 1905, Vol. XXXI, p. 461.

The author refers to the laboratory demonstrations of the protective value of Aronson's antistreptococcic serum by Sommerfield, and to the previous clinical results obtained from its use by Baginsky.

He refers to the recent increase in the strength of this serum and to Aronson's advice to use larger doses than formerly, that is, up to 100 cubic centimeters or over.

In some of the cases here reported, the serum was injected directly into the tonsils in doses of 2-3 cubic centimeter. The author also considers in outline the various forms of skin disturbances as well as the temperature changes due to the injection of the serum.

Such manifestations were present in forty-seven out of one hundred and forty-four cases. He points out the now well-known fact that while an increased amount of serum injected usually brings a greater liability to the injection rashes, that this does not necessarily follow in all cases, for in his series some patients receiving the largest doses did not suffer any of these disturbances.

The skin affections may be either localized or general in character. The former generally follow the injections made into the upper extremities and appear in two forms: first, as a diffuse reddening and swelling near the site of injection, and not rarely becoming generalized; second, as a typical localized urticaria.

The first of these localized forms occur within a day or two of the injection, the second usually on the fourth or fifth day, or even as late as the tenth. For the treatment of these forms the author believes local applications of acetic acid are the best.

The generalized skin disturbances also appear in two forms: first, as a well pronounced urticaria in the form of small or large, sometimes confluent wheals, and second as an erythema which is sometimes strikingly like the exanthematous conditions of some acute infectious diseases.

The generalized skin disturbances usually occur between the sixth and seventeenth days after injection, but they may occur earlier. They are frequently accompanied by fever.

Joint disturbances followed the injection of serum in ten out of 144 cases, and of these ten, six had the skin disturbances as well.

The author considers the effect of the serum upon the disease in two parts, first, the influence upon the course of the disease in its acute form and second upon the complications.

Concerning the former the author states that from the administration of antistreptococcic serum in 165 cases of scarlet fever, he fails to notice any essential alteration of the course of the true scarlet fever symptoms due to such infections.

In his further elaboration of this point the author claims that the temperature courses in scarlet fever are of two forms, one in which the fall is rapid, and the second is a prolonged gradual decline.

In 126 of his cases these two types of temperature curves were uninfluenced to any marked extent by the serum injections. He furthermore calls special attention to the similarity between the first or rapid type of temperature decline to similar curves shown by Moser who attributed the rapid fall to the injections of his antistreptococcic serum.

Mendelsohn considers the throat symptoms of scarlet fever to be much improved by the serum treatment, and more especially in its local use in the tonsils.

Of seven malignant cases two were moribund when first treated, and the other five died later, although they were given large serum injections early in the disease. Ten septic cases likewise ended fatally, although some were injected on the first two days of the disease.

Concerning the prevention of the usual complications, affecting the lymph glands, the ears and the kidneys, the author states that none of these were altogether prevented by the use of the serum. He showed, statistically, that if the character of a given epidemic concerning the frequency of these complications is taken into consideration, the power of the serum to prevent them is not strongly manifest.

Concerning the mortality in his series, he states that eighteen cases out of 165 were fatal. Three of the eighteen were moribund when first treated, and of the remaining fourteen were of the malignant septic type, and the other case had otitis media and mastoiditis.

In addition to the series of cases treated with Aronson's serum, he used Moser's antistreptococcic serum on four other severe cases. In one of them apparent benefit resulted, but the course of the fever was not definitely influenced in any case.

ALBANY MEDICAL ANNALS

Original Communications

THE SEQUENCE OF THE PATHOLOGIC CHANGES IN APPENDICITIS.*

A STUDY OF THE SIGNIFICANCE OF THE LESIONS FOUND IN DIFFERENT STAGES OF APPENDICITIS, BASED ON THE
PATHOLOGIC FINDINGS IN A SERIES
OF OPERATIVE CASES

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Within recent years much has been written concerning the pathology of appendicitis. The anatomic characteristics of the different varieties of appendicitis, together with the secondary lesions accompanying the primary appendiceal inflammation, have been most carefully described and abundant statistics dealing with the relative frequency of the different types of appendiceal and periappendiceal lesions exist. In spite of all this accumulated knowledge, the subject of the pathology of appendicitis is not by any means a closed chapter, but continues to be prominent in medical discussions and literature. The reason for this, perhaps, may lie in the fact that it has not yet been generally recognized that the different pathologic conditions, as they are encountered at operation in cases of appendicitis, represent, for the most part, simply different stages of an inflammatory process involving primarily the appendix and accompanied, in a large proportion of cases, by a more or less extensive secondary involvement of the peritoneal cavity. Most of the studies dealing with the description and classification of the different pathologic varieties of appendicitis are based on a study of the lesions without reference to the duration of the symptoms previous to the observation

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of the pathologic condition and for this reason such studies throw little light on the pathologic history of the disease.

A study of the pathologic history of appendicitis resolves itself into a study of the processes of inflammation and repair as they occur in this disease, and a knowledge concerning the progress of these processes can best be obtained by a combined clinical and pathologic study of a sufficiently large series of cases, tabulating the pathologic findings according to the time which has elapsed between the onset of the attack and the observation of the pathologic condition. When the lesions are studied in this way, there is found to exist a striking general uniformity of the microscopic appearances at each of the succeeding periods following the onset of symptoms. This uniformity in the microscopic appearances exists in spite of decided variations in the gross appearances of the appendices, and the fact that the microscopic features prominent at one period may be either increased or diminished in preceding or in subsequent stages, shows that we have to do with a continuous process and that it is probable that the majority of cases presenting the characteristic lesions of patients operated on on the tenth day would, seven days earlier, have presented the lesions characteristic of the third day. The results of such studies, therefore, should serve not only as a basis for a knowledge of the pathologic history of the disease, but should aid also in the diagnosis of the probable lesions existing at any given period during the attack.

OBSERVATIONS OF CASES.

The following observations are based on a study of the condition of the peritoneum as found at operation in 485 cases of appendicitis¹ occurring at the Albany Hospital during the past six years, and of the condition of the appendix in 188 of these cases, the descriptions and sections of which are on file in the Bender Laboratory. The pathologic findings in this series of cases were studied with special reference to the relations exist-

1. The data referring to the condition of the peritoneum is taken from the notes made at the time of operation: all else is based on the descriptions and sections on file in the Bender Laboratory. The histologic observations have necessarily been confined to those cases, the sections of which have been preserved and are available for present study. While the anatomic variations, especially as regards the condition of the peritoneum, are so variable as to require a large series of cases on which to base satisfactory observations, this is not the case with the histologic changes which are so uniform that it is not deemed necessary to include a larger series of cases.

ing between the character of the lesions and the stage of the disease.

In summarizing the results of the observations in this series of cases, those cases operated on during the first, second, third, fourth, fifth and sixth days of the attack are considered in separate groups for each day. Those cases operated on from the seventh to the tenth, from the eleventh to the fifteenth and from the sixteenth to the thirtieth day are considered in three corresponding groups; while all cases operated on one month or more after the occurrence of a definite attack are considered as a separate group.

The following is a summary of the more striking features of the pathologic process:²

First Day Group.—This was made up of ten patients operated on during the first twenty-four hours following the onset of symptoms. In two cases (20 per cent.) there was a sero-purulent intraperitoneal exudate without perforation of the appendix. In one other case, the omentum was adherent by a fibrinous exudate to a gangrenous appendix. The gross appearances of the nine appendices studied histologically varied greatly. Two showed plainly visible gangrenous areas, one was described as normal, while in others the only macroscopic evidence of disease was a congestion or slight opacity of the peritoneum, with a swollen or hemorrhagic mucosa.

In sharp contrast to the often apparently insignificant gross lesions is the microscopic picture, which is essentially similar in all cases and consists of an intense, diffuse, polynuclear leucocytic infiltration with focal areas of hemorrhage and necrosis involving all coats with a more or less extensive destruction of the mucosa and, in many cases, a fibrinous or fibrino-hemorrhagic exudate on the peritoneal surface. One of the most striking features in these cases is the presence throughout the majority of the sections of numerous areas of necrosis. These areas are larger, but are not more numerous in those cases which show macroscopic evidences of gangrene.

2. The accompanying charts show graphically the relative frequency of the various types of lesions grouped according to the different periods as enumerated above and also serve to give an idea of the relationships existing between the character of the pathologic lesions and the duration of the disease. The absence of irregular fluctuations in the platted curves is evidence that the series of cases here studied has been sufficiently large for the purposes of this investigation, although the relative heights of the different curves must vary somewhat in different series of cases.

Second Day Group.—This was made up of twenty-three patients operated on during the second twenty-four hours following the onset of symptoms. In eight (34.8 per cent.) of the cases of this group intraperitoneal fluid exudates, usually of considerable extent and of a sero-purulent or purulent character were present. As in the first-day cases, the appendices in this group which were studied histologically, presented no uniformity as to gross appearances. Some of them are described as “gangrenous,” others as “catarrhal” and “ulcerative” or “slight peritonitis.”

Microscopically, all the appendices show an intense leucocytic infiltration involving all coats, together with a more or less extensive ulceration of the mucosa, while 70 per cent. show a well-marked fibrinous or fibrino-purulent exudate on the peritoneal surface. In those cases which presented macroscopic evidence of gangrene the areas of necrosis as seen microscopically are decidedly more extensive than in the similar cases of the first-day group, while in those cases which did not present macroscopic evidences of gangrene the focal areas of necrosis so prominent in the first-day cases are still evident in the majority of sections, but are often obscured by the leucocytic infiltration.

Third Day Group.—This was made up of fifty-three patients operated on during the third day following the onset of symptoms. Twenty-nine (53.7 per cent.) of the cases in this group were characterized by intraperitoneal fluid exudates which were of a distinctly purulent character and usually described as peri-appendiceal abscesses. The macroscopic evidences of disease were distinctly more prominent than in the earlier cases. Forty per cent. of the appendices studied histologically were described as “gangrenous” and all but three of the others as “acute” or “acute ulcerative.”

Microscopically, two recurrent cases show decided chronic changes, but no evidence of an acute process. The remaining cases all show a diffuse inflammation like that seen in the earlier groups. In the macroscopically gangrenous cases the necrosis is prominent, while in the non-gangrenous cases focal areas of necrosis are seen only in the mucosa. The most striking histologic feature which distinguishes this group from the earlier groups is the evidence of beginning repair as seen by the presence of fibroblasts in all sections. These new-formed connective tissue cells are especially numerous in the region of the peri-

toneum, although present in other areas, particularly in those cases showing the least marked leucocytic infiltration.

Fourth Day Group.—This was made up of thirty-one patients operated on during the fourth day following the onset of symptoms. In seventeen (54.5 per cent.) of the cases in this group purulent periappendiceal exudates usually described as abscesses were present. With the exception of one normal and one chronic atrophic appendix (microscopic diagnosis), all of the appendices in this group presented well-marked anatomic changes in general similar to those seen in the third-day cases.

Microscopically, the gangrenous cases show large areas of complete necrosis, the histologic picture differing but little from that seen in the gangrenous cases of the third-day group. In sections of the non-gangrenous cases, and in sections taken at some distance from the necrotic areas in the gangrenous appendices, the most noticeable histologic feature which distinguishes this group from the preceding one is a decided increase in the relative number of fibroblasts and the presence of numerous lymphocytes and, in several cases, plasma cells. In those cases accompanied by a periappendiceal exudate a few fibroblasts and many new-formed blood vessels can be seen extending into the exudate from the peritoneal surface. Focal areas of hemorrhage into the exudate occurring from these new-formed blood vessels are seen in many of the sections.

Fifth Day Group.—This was made up of twenty-seven patients operated on during the fifth day following the onset of symptoms. In fifteen (55.5 per cent.) of the cases of this group periappendiceal suppuration was noted. With the exception of one recurrent case, all of the appendices presented easily recognizable anatomic changes most evident in the mucosa or on the peritoneal surface.

Microscopically, the lesions may be divided into two rather sharply defined groups. In the cases presenting macroscopic evidence of gangrene, the necrosis and polynuclear leucocytic infiltration is the predominating characteristic, although the repair process is well advanced in several instances. In the non-gangrenous cases the polynuclear leucocytes have practically disappeared except at the surfaces of the ulcerations in the mucosa and of the periappendiceal exudates. Throughout the coats of the appendix there is a marked increase in the number of fibroblasts and often an intense lymphocytic infiltration. In the periappendiceal exu-

dates the new-formed blood vessels penetrate to a greater distance than in the fourth-day group and this granulation tissue is decidedly richer in fibroblasts.

Sixth Day Group.—This was made up of twenty-four patients operated on during the sixth day following the onset of symptoms. Twelve (50 per cent.) of the cases in this group showed evidence of periappendiceal suppuration and all the appendices showed well-marked anatomic changes. The partially organized periappendiceal exudates were very noticeable in those cases accompanied by abscess formation.

Histologically, the repair processes are decidedly more advanced than in the fifth-day group. The gangrenous cases show well-marked evidences of repair, the histologic picture of which is similar to that seen in the non-gangrenous cases of the preceding group. A number of these cases, however, present the picture of a fresh acute process engrafted on the subacute process, there being a diffuse leucocytic infiltration with areas of hemorrhage and necrosis, the latter often involving areas rich in fibroblasts. The non-gangrenous cases now show areas in which the fibroblasts are massed together and elongated so as to resemble young connective tissue cells. Small ulcers in the mucosa have apparently been largely repaired.

Seventh to Tenth Day Group.—This was made up of one hundred and six patients operated on from the seventh to the tenth day of the attack. Fifty (47.1 per cent.) of the patients operated on during this period had also periappendiceal suppuration, which in all but six cases was more or less localized and usually accompanied by marked evidences of organization. Anatomic changes, for the most part, were well marked, particularly so in those cases characterized by partially organized periappendiceal exudates. In the cases unaccompanied by periappendiceal exudates the anatomic lesions were decidedly less prominent than in the earlier groups, and four of the appendices studied histologically were described anatomically as cases of catarrhal appendicitis.

Histologically, the repair process has become still more advanced, so that in 18 per cent. of the appendices in this group the organization is so far advanced as to present the picture of a distinctly chronic process, the evidence of a previous active inflammation being shown by the presence of new-formed fibrous tissue which is rich in connective tissue cells. In addition to

the new-formed connective tissue in these cases, numerous focal collections of lymphocytes are seen, which are most noticeable in the subperitoneal tissues and muscular coats. In 64 per cent. of the appendices in this group the presence of the fibroblasts and other evidences of active repair is noticeable, being most marked in those cases showing partially organized periappendiceal abscesses. Eighteen per cent. of the cases show evidences of an acute process, which is seen as a diffuse polynuclear leucocytic infiltration, often accompanied by hemorrhage and necrosis. In all but one of these acute cases, however, there are also evidences of an older subacute process.

Eleventh to Fifteenth Day Group.—This was made up of forty-eight patients operated on from the eleventh to the fifteenth day following the onset of symptoms. In this group in but sixteen cases (33.3 per cent.) were periappendiceal abscesses found, and when present the pus usually occurred in small collections surrounded by thick masses of new-formed connective tissue. The macroscopic appearances of the appendices in this group varied greatly: Two were described as "gangrenous," two as "acute," three as "normal," and the rest as "subacute," "chronic," "chronic obliterative," "chronic periappendicitis" and "catarrhal." Except in those cases showing an acute process and in those accompanied by evidences of periappendiceal organization, the gross changes in the appendices, as a rule, were not prominent.

Microscopically, 68 per cent. of the appendices present lesions of a typically chronic character, the most constant feature of which is an increase of connective tissue, usually well marked and accompanied by conspicuous focal collections of lymphocytes; the latter occur, as a rule, within the perivascular and interstitial lymph channels of the peritoneal and muscular coats. An additional 10 per cent. show a less advanced stage of repair corresponding to the predominating lesion in the preceding group. Ten per cent. show changes confined to the mucosa, such as are usually described as catarrhal appendicitis. Ten per cent. show the presence of acute inflammation, in addition to subacute or chronic changes.

Sixteenth to Thirtieth Day Group.—This was made up of forty-six patients operated on from the sixteenth to the thirtieth day following the onset of symptoms. Abscesses were present in 19 per cent. of the patients operated on at this period of the dis-

ease; this decrease in the frequency of pus being accompanied by a corresponding increase in the number of cases showing adhesions without the presence of pus. In the cases in which there was no histologic evidence of an acute or subacute inflammatory process, the macroscopic changes in the appendices were not prominent except in those cases showing an obliteration of the lumen or evidences of periappendiceal organization.

Microscopically, 69 per cent. of the cases show only chronic changes. In these the new-formed connective tissue is more fibrous than in the similar cases of the preceding group, while the focal collections of lymphocytes, so prominent in the

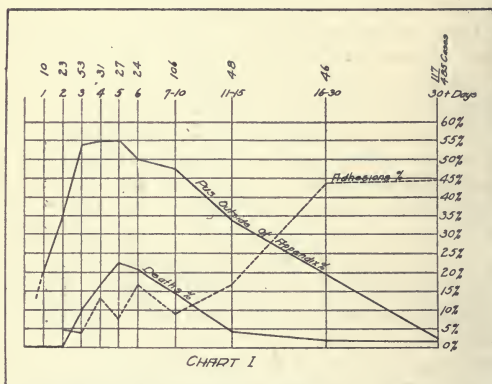


Chart 1.—Condition of the peritoneum and death rate. The term "pus outside of appendix" is used to include all cases accompanied by purulent intraperitoneal fluid exudates, either localized or general. The term "adhesions" is limited to those cases presenting organized adhesions without the presence of pus.

preceding group, are now less numerous. A few cases still show acute or subacute lesions, in addition to more chronic changes. Ten per cent. of the cases must be considered as examples of catarrhal appendicitis, as the demonstrable pathologic changes are confined entirely to the mucosa.

Patients Operated on One Month or More After a Well-defined Attack.—In this group are included one hundred and seventeen patients, having, for the most part, histories of long-standing chronic, recurrent or relapsing appendicitis. In three cases (2.5 per cent.) small foci of pus were found in connection with extensive adhesions. In 44 per cent. of the cases there were

well-marked adhesions, without the presence of pus. With the exception of the cases of chronic obliterative appendicitis, the macroscopic changes in the appendices were usually not prominent, and many of the cases which show an extensive increase of interstitial connective tissue were described as macroscopically normal.

No appendices in this group show microscopic evidence of an acute or subacute inflammatory process. Six per cent. of the

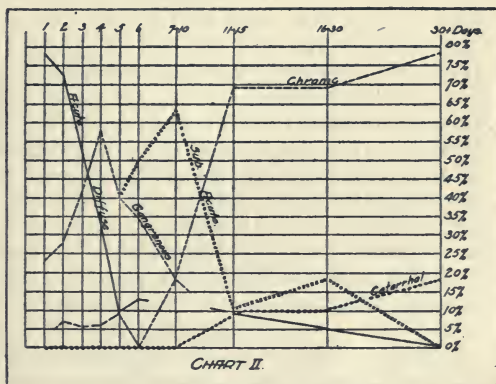


Chart 2—Histologic condition of appendix. The term "acute diffuse" is used to include all appendices showing a diffuse polynuclear leucocytic infiltration without the presence of macroscopic evidences of gangrene. Under the term "gangrenous" are included all appendices showing macroscopic areas of gangrene with or without perforation. Under the term "subacute" are included all appendices showing evidences of active repair unaccompanied by a polynuclear leucocytic infiltration. Under the term "chronic" are included all appendices showing a distinct increase of connective tissue without evidences of active repair or leucocytic infiltration. All appendices showing changes confined to the mucosa are included under the term "catarrhal."

appendices are microscopically normal; 16 per cent. are examples of catarrhal appendicitis; 52 per cent. are microscopically examples of more or less well-defined chronic interstitial appendicitis; 26 per cent. are examples of chronic obliterative appendicitis.

SUMMARY.

The character of the histologic changes is essentially similar in all of the appendices of this series which were removed during the first few days of the disease and is that of a severe, diffuse inflammation, accompanied by focal areas of hemorrhage and

necrosis. These focal areas of necrosis may increase in extent during the first few days and give rise to macroscopic areas of gangrene or they may remain of microscopic size and be quickly repaired. The various anatomic varieties, such as the gangrenous, perforative and ulcerative forms, are determined by the extent and distribution of these necroses.³

Evidences of repair are seen as early as the third day, and in the non-gangrenous cases the histologic picture of an acute process has changed to that of a distinctly reparative process by the fifth day. In those cases in which the necrosis is so extensive as to give macroscopic evidences of gangrene, the histologic picture of an acute process persists for a longer period, but even in these cases (unless there is a later acute process engrafted on the earlier lesion) the evidences of repair are by the sixth or seventh day the predominating feature of the lesion. Evidences of a recurrent acute process are by no means uncommon, and were present in from 10 to 15 per cent. of all cases after the first week.

During the second week of the attack the repair proceeds rapidly. Fibroblasts, new-formed blood vessels and lymphocytes making up the chief features of the histologic picture. The rapidity with which the repair of the appendix itself is accomplished depends chiefly on the extent of the primary destruction and on the presence or absence of a periappendiceal exudate. By the end of the second week, in the majority of cases, the repair is so far advanced that the new-formed connective tissue may constitute the only evidence of a previous inflammation, although in cases with extensive periappendiceal exudates evidences of active organization of the exudate itself are still to be seen.

Except for the completion of the repair in those cases accompanied by more extensive periappendiceal lesions, the histologic changes occurring after the second week are seen chiefly in the more fibrous nature of the new-formed connective tissue which persists so as to be readily recognizable in the majority of cases. Of the patients operated on one month or more following an

3. In connection with the well-known difficulties encountered in attempting to predict the subsequent course of a case of appendicitis seen during the first few days of the disease, it is a fact worthy of emphasis that the early histologic changes were essentially similar, irrespective of the severity of the clinical symptoms, in all the cases observed; and that the later more important gross changes, such as gangrene and perforation, were dependent on the apparently more or less accidental factors which determined the extent and distribution of the necrosis.

acute attack, 78 per cent. were cases of chronic interstitial or chronic obliterative appendicitis very often accompanied by adhesions. Six per cent. of the appendices were apparently normal, while in 16 per cent. the demonstrable pathologic changes were confined to the mucosa.

A notable feature seen in the histologic examination of these cases is the fact that in no instance was the pathologic change confined to the mucosa in the appendices examined during the first ten days of the attack.

In this series of cases, purulent fluid outside of the appendix was present in 51 per cent. of the patients operated on from the third to the tenth day of the attack.⁴ After the tenth day the relative number of cases accompanied by abscesses decreases steadily, while on the other hand occurs corresponding rise in the number of cases presenting adhesions without the presence of pus, which would seem to indicate that resolution by absorption had played an important rôle in the repair of this lesion. This is doubtful, however, and is probably in large measure due to the fact that the involvement of the peritoneal cavity was less extensive in those cases in which operation was delayed. In a number of cases, however, the adhesions were so massive as to leave little doubt of the previous presence of an extensive peri-appendiceal exudate.

After the third day the exudates on the peritoneal surface contain highly vascular granulation tissue, and it is probable that the high operative death rate between the third and tenth days in part may be accounted for by absorption from the denuded granulating surfaces as well as by the extent of the peritonitis and the bad general condition of the patients.

4. This includes the cases of general peritonitis as well as those accompanied by a more localized periappendiceal exudate. According to the reports of the operations, the cases of general peritonitis were distributed as follows:

First day.....	No case.
Second day.....	One case with recovery.
Third day.....	Seven cases with five deaths.
Fourth day.....	Four cases with four deaths.
Fifth day.....	Six cases with five deaths.
Sixth day.....	Four cases with four deaths.
Seventh to tenth day.....	Six cases with six deaths.
Eleventh to fourteenth day.....	One fatal case.

PRIMARY CARCINOMA OF THE VERMIFORM APPENDIX, WITH A REPORT OF THREE CASES.

Read before the Medical Society of the County of Albany, November 8, 1905.

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(From The Bender Laboratory, Albany, N. Y.)

The recognition of primary carcinoma as a not infrequent disease of the appendix has been brought about during the past ten years as the direct result of the increasing tendency to examine microscopically all tissues removed by the surgeon. Casuistic reports of instances of this disease, thus brought to light, have appeared in rapid succession since 1896. Letulle and Weinberg, Harte and Willson, A. O. J. Kelly, Elting and Moschowitz have each reported small groups of cases observed in comparatively short periods of time. Their communications containing, as they do, general conclusions drawn from a critical review of the literature, have done much to bring the important facts concerning primary carcinoma of the appendix to the general attention of the profession. Nevertheless from a perusal of this literature it is evident that many points are still in doubt and that final general conclusions can be reached only after a much larger number of cases have been placed on record.

It is with the desire therefore to add to the material already available, and not necessarily to present anything new, that this communication comprising a report of three cases and a brief summary of those already described is presented.

Case I—Records of the Bender Laboratory, Surg. Path. No. 04:128.

Clinical History—Mr. H., male, aged thirty-eight, was admitted to the Albany Hospital on February 22, 1904: service of Dr. Albert Vander Veer.

Family history—Negative. *Past history*—Typhoid fever at fourteen; otherwise negative. *Present illness*—On Sunday, February 21st, the patient experienced sharp pains radiating from the center of the abdomen to the right iliac fossa; several attacks of vomiting; no constipation. Blood count showed a leucocytosis of 19,000. *Clinical Diagnosis*—Acute appendicitis.

Operation, February 22, 1904—"Appendix bound down by adhesions and underneath umbilicus. Beginning peritonitis. Appendix easily removed." Recovery uneventful. Discharged March 9, 1904.

Pathological Examination—The specimen consists of the distal portion of the appendix, which is five centimeters in length. The meso-appendix is considerably thickened. The peritoneal surface is covered with greyish yellow fibrin. The lumen is patent throughout. The mucosa, which in general, is of an opaque yellowish color, and deeply injected, exhibits a few small foci of necrosis. *Anatomical Diagnosis*—Acute appendicitis.

Microscopic Description—The lumen is much smaller than normal and contains desquamated epithelial cells, leucocytes and granular debris. The mucosa, slightly infiltrated with leucocytes, is intact in about two-thirds of its circumference, but has entirely disappeared at that portion of the organ to which the mesentery is attached. Here is a slightly irregular ulcerated surface. The tissue beneath this ulcer is composed of closely arranged connective tissue forming small alveoli, in which are masses of epithelial cells. This new growth replaces entirely the mucosa at this point and invades the muscular coat. The masses of cells are of small size near the base of the ulcer, but increase in size as the muscularis is reached; though in the outer portions of the latter they again diminish in size and are not very abundant. Beneath the peritoneum are found numerous nests of epithelial cells larger than those seen in any other portion of the appendix. These pass for a short distance into the loose fatty tissue of the meso-appendix, extending apparently along the lymphatics. The cells composing the epithelial masses are oval or polygonal in shape with considerable light protoplasm and vesicular nuclei. No tendency to tubular arrangement is evident. The stroma is a loose connective tissue with numerous lymphoid and plasma cells.

Except at the mesenteric attachment the serosa is obscured by a mass of young granulation tissue diffusely infiltrated with leucocytes and containing small areas of haemorrhage.

Microscopic Diagnosis—Carcinoma simplex of the appendix with ulceration. Acute appendicitis; periappendicular suppuration.

Case II—Records of the Bender Laboratory, Surg. Path. No. 04:200.

Clinical History—Mr. B., aged twenty-three, was admitted to the Albany Hospital on March 15, 1904; service of Dr. W. G. MacDonald.

Family history—Negative. *Previous history*—Negative. *Present illness*—Patient thinks it began in September, 1903, when he had severe pains in right iliac region lasting for a week. He had a similar but more severe attack in October. Present attack began on evening of March 13th, with pain in right lower quadrant of abdomen. Pain of varying severity has continued since. *Clinical Diagnosis*—Subacute appendicitis.

Operation, March 18th—"Appendix removed with difficulty."

Pathological Examination—Specimen consists of appendix and a piece of blood stained fatty tissue. The appendix considerably thickened measures seven centimeters in length and eight-tenths of a centimeter in greatest diameter. The serosa is covered with tags of fairly firm fibrous tissue. The mucosa is swollen and granular, while the lumen is completely obliterated at a point five centimeters from the distal end. The fat tissue accompanying appendix is haemorrhagic and firmer than usual.

Anatomical Diagnosis—Chronic appendicitis and periappendicitis.

Microscopic Description—The lumen of the appendix is entirely obliterated, and mucosa and submucosa are replaced by a new growth of loose connective tissue, in the meshes of which are epithelial cells closely massed. This new growth penetrates to a slight extent the muscular coat, and at only one point, opposite the attachment of the meso-appendix, the masses of epithelial cells reach the subserous tissues. Here however the invasion is sharply limited, and no extension to the meso-appendix is apparent. The muscular and subserous coats show evidence of a slight chronic inflammation, but it is impossible to say whether the obliteration of the lumen preceded or was the result of the new growth. Although serial sections have been made at various levels of the tumor, it has been impossible to determine definitely this question. Above the level of the tumor the organ shows evidence of a mild chronic inflammation, but is otherwise negative.

Microscopic Diagnosis—Carcinoma simplex of appendix with obliteration of lumen. Chronic appendicitis.

Case III—Records of the Bender Laboratory, Surg. Path. No. 04:406.

Clinical History—Miss A., aged eight years, admitted to the Albany Hospital on May 14, 1904, service of Dr. Edgar A. Vander Veer. Nothing of interest in family or previous history. There were no symptoms referable to the appendix until May 14th, when a severe acute attack of appendicitis developed. At the operation, on May 16th, the appendix was found to be surrounded by an inflammatory mass, which was adherent also to the omentum. In the manipulations attending the removal of this mass, it ruptured and a small amount of pus escaped.

Pathological Examination—Specimen consists of appendix measuring five and five-tenths centimeters in length, the upper half of which averaging five millimeters in diameter, is practically normal. The lower half is buried in a mass of partially organized tissue which surrounds the tip of the appendix in a layer approximately five millimeters in thickness. The wall of this portion of the appendix is thickened and indurated. The mucosa is injected, and at one point shows a superficial loss of substance. Lumen normal. Accompanying the specimen is a piece of omentum measuring $4 \times 3 \times 1.5$ centimeters, showing a core of soft yellowish material surrounded by a zone of translucent granulation tissue.

Anatomical Diagnosis—Partial organization of periappendicular abscess.

Microscopic Description—The organ is entirely surrounded by a mass of granulation tissue, which in some places is quite fibrous while in other places it is very loose and vascular. Leucocytes are abundant throughout, and here and there are grouped in distinct foci. The meso-appendix is extensively involved. The appendix, greatly distorted, is found a little to one side of the center of this mass. The lumen is compressed, triangular in shape, and contains a few leucocytes and a small amount of granulate material. A very definite mucosa is seen, but the glands are few in number and irregularly arranged. The cylindrical surface epithelium of the mucosa is very distinct and show a superficial ulceration over an area corresponding to a new growth which involves the sub-

mucosa. Here the mucosa contains but few glands and several small irregular masses of epithelial cells separated by a loose stroma rich in lymphoid and plasma cells. This new growth involves the entire submucosa, in which the masses of epithelial cells are larger and the stroma more fibrous. There is no invasion of the muscular coat.

Microscopic Diagnosis—Carcinoma simplex with ulceration; periappendicular abscess.

With the exception of Case III, which is the first reported instance of cancer of the appendix occurring in the first decade of life, these cases add little that is new to our knowledge of cancer of this organ. They however increase the number of reported cases available for comparison and as the total is now 34, if we include the three here reported, a brief resumé of the subject may be justifiable.

SUMMARY OF REPORTED CASES OF PRIMARY CANCER OF THE APPENDIX.

In the following paragraphs is given a brief summary of each of the cases* of primary cancer of the appendix reported previous to 1905. The first twenty are those examined and accepted by Elting in 1903. To these, others since reported have been added and although the list may not be completed, it represents the result of a very thorough search of the literature. No case has been included unless the diagnosis was confirmed by microscopic examination.

1. *Beger* (1882). Male, aged forty-seven. Three and one half years before final operation a tumor of right inguinal region was incised; a litre of pus was removed; sinus persisted. Adenocarcinoma of appendix involving caecum by extension; metastases in retroperitoneal lymph nodes. Died thirty-six hours after operation.

2. *Stimson* (1896). Female, aged forty-four. Severe attack of appendicitis ten years previously. Two mild attacks within two months before operation. "Degenerated carcinoma."

3. *Letulle and Weinburg* (1897). Autopsy on individual dying of tuberculosis. Starting point of carcinoma at line of fusion in appendix, the lumen of which had been obliterated by preexisting chronic inflammation.

4. *Letulle and Weinburg* (1897). Terminal extremity of appendix seat of a peculiar adenomatous hyperthrophy associated with obliterative appendicitis. The carcinoma had begun in scar and had involved all the coats of the appendix.

5. *Mosse and Daunic* (1897). Female, aged fifty. Autopsy. No his-

*Since preparing this list Kelly and Hurdon have reported three additional cases. See Kelly and Hurdon, *The Vermiform Appendix and Its Diseases*, W. B. Saunders and Co., Philadelphia and London, 1905.

tory of appendicitis. Tumor in mucosa and muscularis in part alveolar and in part cylindrical cell in type.

6. *Wright* (1898). Autopsy. No history. Adeno-carcinoma at base of appendix. Peritonitis due to perforation of appendix.

7. *Hurdon* (1900). Female, aged twenty-four. Pain in lower part of abdomen and back since first child birth, associated latterly with constant aching in right lumbar region. Operation for retroflexed uterus; appendix involved in dense adhesions. Adeno-carcinoma involving all coats of appendix.

8. *Giscard* (1900). Male, aged thirty-seven. Two severe attacks of appendicitis within nine months. Operation; abscess about appendix; adeno-carcinoma.

9. *Rolleston* (1900). Female, aged twenty-six. Four attacks of appendicitis within fifteen months. "Spheroidal-cell carcinoma near tip." In poor health several months after operation.

10. *Letulle and Weinburg* (1900). Twelve and a half years of age. "Muco-membraneous colic" since infancy; history of two attacks of appendicitis at intervals of a year. Operation after subsidence of second attack, which was very acute. Appendix adherent to iliac fossa, upper portion dilated, lower portion contracted, contains an enterolith. *Histological examination*—chronic appendicitis with ulceration in upper portion and obliteration and carcinoma in lower portion.

11. *Letulle and Weinburg* (1900). Autopsy. No history. Chronic obliterative appendicitis with cancer at tip of organ.

12. *McBurney* (1901). Female, aged twenty-three. Attack of appendicitis two years before she came under observation. A second attack two months before operation. Strictures at base and tip of appendix; tumor at tip. Carcinoma simplex.

13. *McBurney* (1901). Male, aged thirty. Autopsy. No previous history of appendicitis. Carcinoma simplex.

14. *Goffe* (1901). Female, aged fifteen. For more than a year pain in the appendiceal region on exercising. Chronic appendicitis. Carcinoma simplex.

15. *Harte and Willson* (1902). Female, aged twenty-four. At nineteen appendicitis; in bed four weeks. Free from symptoms for three years. At twenty-three, during period extending over whole winter, experienced pains similar to those three years previous. Symptoms disappeared finally, but reappeared in the summer. Operation—almost complete obliteration of appendix. Scirrhus carcinoma at tip.

16. *Harte and Willson*. Male, aged twenty-five. Eight months prior to the operation had more or less continuous pain in the right iliac fossa. Operation—adhesions; perforation, acute suppurative appendicitis. Carcinoma simplex near tip.

17. *Wier* (1902). No clinical history or pathological description. "Carcinoma." No return after three years.

18. *Jessup* (1902). Female, aged thirty-six. No symptoms of appendicitis; operation for disease of uterine adnexia. Cyst of ovary. Appendix bound down with adhesions and therefore removed. Adeno-carcinoma in middle third.

19. *Kelly, A. O. J.* (1902). No clinical history. Operation—acute ulcerative appendicitis. Carcinoma simplex.

20. *Kelly, A. O. J.* (1902). Male, aged eighteen. Well until eight days prior to admission, when symptoms of acute appendicitis developed. Operation—pus about appendix, acute ulcerative appendicitis. Carcinoma simplex at base.

21. *Elting* (1903). Male, aged eighty-one. Autopsy. No symptoms of appendicitis. Colloid cancer of appendix with perforation. No metastases.

22. *Elting* (1903). Female, aged thirty-six. Patient enjoyed good health until eight years previously, when she had an attack of what was called "peritonitis," from which she made a fairly good recovery. Operation for "pelvic disease." No symptoms of appendicitis. Appendix removed with pelvic organs. Obliteration of lumen of entire appendix with carcinoma simplex of distal end. In good health three years after.

23. *Elting* (1903). Male, age ten. Present illness began in January, 1902, with an attack of acute appendicitis which was associated with the formation of an indurated mass in the right iliac fossa, in which after a short time an abscess formed, which opened internally in the right lower quadrant of the abdomen. The sinus still existed when patient was admitted to the hospital. Patient had lost forty pounds. Operation—new growth involving appendix, caecum, ilium, and portions of colon and jejunum, with metastases in adjacent lymph nodes. Died about two weeks after operation. "Primary colloid carcinoma of the appendix of an adenomatous type."

24. *Moschcowitz* (1903). Male, aged thirty-seven. Disturbance for three years, supposed to be alcoholic gastritis; later symptoms of appendicitis with general peritonitis. Operation—general peritonitis. Appendix surrounded by adhesions and partially gangrenous with tumor at tip size of a bean. Adeno-carcinoma. No recurrence eighteen months after operation.

25. *Moschcowitz*. Female, aged twenty. Typical attack of appendicitis. Operation—acute inflamed appendix; carcinoma simplex one inch from tip.

26. *Moschcowitz*. Female, aged twenty-four. Five months pregnant. Foetal movements felt for two weeks. Present history five days duration. Pain in epigastrium, fever, leucocytosis. Exploratory laparotomy. Appendix adherent to iliac fossa. Chronic appendicitis; medullary carcinoma of distal portion.

27. *Burnam* (1904). Male, aged twenty-five years. For two years patient had recurring attacks of pain in right lower quadrant of abdomen. Operation—acute appendicitis with adeno-carcinoma of distal end of appendix.

28. *Norris* (1904). Female, aged twenty-seven. No history of appendicitis. Operation for retroflexed uterus, pyosalpinx and inguinal hernia. Appendix removed because of reddened and adherent distal end. Obliterative appendicitis with carcinoma simplex at tip.

29. *Neri* (1904). Male, aged twenty-nine. Repeated attacks of appendicitis. Chronic appendicitis with adeno-carcinoma.

30. *Jones and Simmons* (1904). Female, aged twenty-six. Four attacks in twelve years, termed colic. Chronic appendicitis with carcinoma simplex at base of appendix.

31. *Cullingworth and Corner* (1904). Female, aged thirty-one. Had had two attacks of pain in right side. Operation for tumor of right broad ligament. Appendix removed on account of bulbous enlargement at distal end. "Spheroidal cell" carcinoma. No recurrence after three years.

Frequency of occurrence. The older statistics, as quoted by A. O. J. Kelly, indicate that before the days of routine microscopic examination carcinoma of the appendix was but rarely seen. Thus in 40,838 autopsies at the Vienna General Hospital from 1870-1892 carcinoma of the appendix occurred, according to the compilation of Madyl and Nothnagel, but twice. Leichtenstern's series of 770 cases of intestinal carcinoma contains three examples of cancer of the appendix. Kelynack in 1893 could find no record of an undoubted primary cancer of the appendix. In this connection he quotes the records of four London hospitals which gave a total of 15,481 new growths but with no mention of a neoplasm of the appendix. Since that time thirty-one cases nearly all detected only upon microscopic examination have been reported. In 1900 Hurdon found but ten cases in the literature and of these but three were confirmed by microscopic examination. Elting in 1903 brought together forty cases, only twenty of which however he accepted as primary. With the three cases here reported the total number of cancers apparently primary in the appendix and confirmed by a microscopic examination is now thirty-four. Cancer of the appendix is therefore no longer a rarity, but these figures unfortunately give no adequate idea of its frequency in relation to other diseases of the appendix. Few operators make it a rule to have all appendices which they remove examined microscopically. As a rule only those which show to the naked eye some unusual appearance are investigated and thus most of the reported cases have been discovered. Little information concerning the incidence of cancer in a large number of appendices examined microscopically as a matter of routine is available. Practically the only series is that of Kelly, who found primary cancer twice in 706 appendices removed at operation. The three tumors here reported occurred in a series of 201 appendices removed at operation and examined microscopically

between August 31, 1903, and September 1, 1904.* Previous to September 1, 1903, 320 appendices removed at operation had been examined at the Bender Laboratory, though not always histologically, and as two of Elting's cases were drawn from this number, we have a total of five primary cancers in a group of 521 examinations in one laboratory and representing practically the operations of one hospital (Albany Hospital) for a period of eight years. Moschcowitz's three cases occurred at the Mount Sinai Hospital within a period of sixteen months in a service averaging yearly 200 to 300 operations for appendicitis; all appendices however were not examined microscopically. Neri reports one cancer occurring in a series of eighty appendices removed in Biondi's clinic. It is obviously impossible to draw definite conclusions from these figures. Of the two properly controlled series, Kelly's indicates that cancer occurs in relation to other diseases of the appendix as 1:353, while our series shows a proportion of 1:67. Estimating the other series of cases in the same way, we have for Elting's group a ratio of 1:160, for Moschcowitz's 1:125, while the total number of specimens examined at Bender Laboratory would yield a proportion 1:104. Although these figures vary considerably, it would nevertheless appear justifiable to conclude that routine histological examination of all appendices removed at operation would demonstrate primary carcinoma to be present in about one per cent of all cases.

ETIOLOGY.

The only factors worthy of consideration in this connection are sex, age and antecedent pathological conditions of the appendix.

Sex. An analysis of the twenty-seven cases in which the sex of the patient is stated shows that fifteen were females and twelve males. These figures would indicate that sex is not a predisposing factor, as might appear to be the case from some of the earlier reports which show that three-fourths of the cases occur in females.

Age. One is accustomed to regard carcinoma as a disease of those in or past the fourth decade of life. Carcinoma of the

*Dr. Pearce tells me that in the following nine months, ending July 1, 1905, 214 appendices were examined at the Bender Laboratory and that but one primary cancer was found.

appendix is a surprising exception to this view. Of the twenty-eight cases in which the age is stated, it is seen that all but four of the individuals were under forty years of age and seventeen, or 60.7 per cent., were under thirty.

The largest number of cases in any one decade occurred in the third; the extremes are represented by individuals aged eight and eighty-one years respectively. The first decade is represented by one, the second by five, the third by eleven, the fourth by seven, the fifth by two, the sixth by one, the seventh and eighth by none, and the ninth by one case.

Relation to inflammatory conditions. The frequent occurrence of carcinoma of the appendix as shown by the above analysis in the earlier years of life has been noted by all who have investigated this subject. This has led to the general opinion that the inflammatory lesions of the appendix which occur so commonly in the same period have some etiological relation to the new growth. Letulle and Weinburg especially have emphasized the relation of cancer to chronic obliterative appendicitis. Their view is exceedingly plausible for the appendix is a vestigial organ and it is well known that in such, as well as in atrophied organs, lawless growth of epithelium is prone to occur. Chronic obliterative appendicitis is usually accompanied by some atrophy and considerable displacement of epithelial elements. Under such circumstances irregular growth of epithelium in the midst of the irregular connective tissue proliferation could readily be understood. There is however as yet insufficient evidence to support this view. Aside from Letulle and Weinburg's four cases, in but two is an obliteration of the lumen mentioned and in these it is not clear whether the obliteration preceded or was the result of the new growth. In one of our cases it was impossible to determine this point. In five other cases a definite microscopic diagnosis of chronic appendicitis is made. It is of interest also that a large proportion of the cases give a history of previous attacks referable to the appendix. On the other hand in a larger number of cases the tumor gave rise to no symptoms or to but one acute attack. It is obvious therefore, that while it is possible that cancer of the appendix may bear some relation to chronic inflammatory disturbance of the organ, further detailed investigations are necessary before it can be determined whether the latter are the cause or the result of the new growth.

PATHOLOGY.

Location of tumor. The location of the tumor is more or less definitely stated in twenty of the descriptions; in twelve it occurred at the distal end usually at the tip of the organ, in three at the base, in two in the middle third and in three it involved the caecum. In these last it is possible that the point of origin was in the caecum.

Gross appearance. The tumor in most instances was obscured by acute inflammation or in an obliteration of the lumen of the appendix and therefore was not recognized upon microscopic examination; such was the case in each of the three cases here reported. In those reports accompanied by a gross description, the new growth is usually described as a firm white nodule. The size of the tumor varies considerably; the larger ones are described variously as of the size of a marble, a pea or a cherry pit; others measure from five to thirteen millimetres in diameter. Occasionally no distinct tumor is evident but merely a localized thickening of the wall, or more frequently, an obliteration of the lumen indistinguishable from a chronic obliterative inflammation.

Histology. Seventeen tumors have been described as carcinoma simplex, alveolar or spheroidal cancer; in one of these the qualifying adjective, medullary, was used and in one, scirrhous. Eight have been termed adeno-carcinoma or cylindrical cell cancer, two colloid and seven merely carcinoma. The predominating type of tumor therefore appears to be the simple alveolar cancer.

Extension, Metastases and Recurrence. Appendiceal cancer shows little tendency to invade other tissues. Three cases of involvement of the caecum have been reported. In one (Jones and Simmons) the invasion of the caecum was slight; in another (Beger) a tumor the size of a walnut projected into the caecum and metastases were found in the retroperitoneal glands; in Elting's case, the adjacent coils of small and large intestine were affected as were also the lymph nodes. With these exceptions, cancer of the appendix appears to have little tendency to extension; the growth being limited as a rule to submucos and muscular coats. In Norris' case and in Case II here reported a tendency to extend into the meso-appendix was observed. Metastases have been described only in the two cases

of Beger and Elting just cited. Little information concerning recurrence of the tumor after removal is available. Few reports contain the after history of the patient and indeed the majority of reports are so recent that sufficient time has hardly elapsed for observations on this point. Rolleston, on account of the poor health of his patient several months after operation, suspected a recurrence. Wier's patient was in good health three years after operation. Harte and Willson quote a personal communication from Hurdon stating that her patient was in good health two years after operation, with no evidence of recurrence. Moschcowitz had occasion to open the abdomen of his first patient one and one-half years after removal of the appendix and found no evidence of recurrence of carcinoma at the site of the previous operation.

Associated Lesions. These include practically all the acute and chronic inflammatory conditions which may affect the appendix. Acute lesions were present in twelve of the cases cited above, and include suppurative, ulcerative and gangrenous appendicitis, periappendiceal abscess and peritonitis. The chronic lesions in thirteen cases include chronic interstitial and obliterative appendicitis, chronic periappendicitis and organization about chronic abscess. Not infrequently acute and chronic lesions were associated. A sinus discharging externally was present in each of two of the cases of periappendiceal abscess. Perforation is noted in two cases. In one, discovered at autopsy, a general peritonitis was present; in the other, at operation, a brownish fluid with faecal odor escaped on opening the peritoneum. Elting's case of colloid cancer, found at autopsy, showed rupture without evidence of inflammation. Enteroliths have been noted in a few instances.

Clinical History. On examination, the clinical data accompanying the cases here recorded shows that appendiceal carcinoma gives rise to no peculiar symptoms; the symptoms demanding operation have in all instances been those of the associated acute or chronic inflammation. An analysis gives the following results: Six tumors discovered at autopsy, death being due to other causes, with no history of symptoms referable to the appendix; six discovered while operating for the relief of symptoms referable to disease of the pelvic organs, and twenty-two in which the operation was done on account of symptoms more or less definitely those of appendicitis. Of the latter in two

no details of the clinical history are given; in four there is a history of a single sharp attack; in ten a history of recurrent appendicitis with from two to four definite exacerbations and in six a history of symptoms referable to the appendix and covering a considerable period of time. It is worthy of note that in all cases which demanded operation the symptoms were those of inflammation of the appendix. The four cases in which no inflammation was found were among those discovered at autopsy or during operation for disease of other organs. It would seem therefore justifiable to conclude that the tumor itself while limited to the appendix gives rise to no pathognomonic symptoms; all manifestations demanding operation are those of the associated inflammation.

CONCLUSIONS.

1. Primary carcinoma of the appendix is present in from one-third to one per cent. of the appendices removed at operation; its discovery at autopsy is very unusual.

2. It is a tumor of early life, occurring usually between the ages of ten and forty; the largest number being in the third decade.

3. It occurs with equal frequency in either sex.

4. Acute or chronic inflammatory lesions are usually present and are responsible for the symptoms demanding operation; the tumor itself while localized gives rise to no pathognomonic symptoms.

5. Direct extension to other organs and metastasis are rare.

6. The usual type is the simple alveolar cancer; adeno-carcinoma occurring next in frequency, while colloid cancer is unusual.

7. Conclusive information concerning the relation of this lesion to other diseases of the appendix can only be obtained by the careful routine histological examination of all appendices removed at operation.

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RETENTION CYST AND DIVERTICULUM OF THE VERMIFORM APPENDIX.

By ERASTUS CORNING.

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Retention cyst of appendix.—The recognition of retention cyst, known also as cystic dilation, hydrops and mucocele of the appendix, is generally ascribed to Virchow,¹ who characterizes it as simple cyst caused by the retention of mucus in an organ, partially or completely obliterated in its proximal portion. Virchow, however, refers to Rokitsansky's² earlier observation that an obstruction of the appendix leads to an accumulation of colloid material and a cystic condition which he terms hydrops of the appendix. Some of the lesions of the appendix reported at about this time as tumor would appear rather to be retention cysts. Virchow states that he considers the colloid tumor described by Gähtgens in 1853 to be such. There is also some doubt concerning the nature of the tumors of the appendix reported by Rokitsansky³ in 1867 as colloid cancer. The gross descriptions of these accurately characterize cystic dilation and in the absence of microscopic examination there is reasonable doubt as to whether they are examples of cancer or cyst.

The subject of cystic dilation has never attracted much attention, probably because it is never recognized clinically and also because pathologically it is generally considered to be merely an unusual form of chronic appendicitis. Still the literature con-

tains many reports of cases. Van Hook⁴ in 1896 was able to collect thirty-two cases in which the condition was found either at autopsy or operation; a cursory review of the literature indicates that to date only about sixty cases have been reported. The largest number reported by a single investigator are the six described by Ribbert⁵ in 1893. Statistics based on autopsy material indicate, however, that it is not very infrequent. Ribbert's cases were found in the course of 400 post mortem examinations. Bryant⁶ found one in 124 autopsies, Steener⁷ three in 2,286 autopsies, Boody⁸ one in 528, and Christian⁹ sixteen in 3,770. These figures, however, give no information concerning the frequency of cystic dilation as compared with other diseases of the appendix as seen at operation and as far as I am aware, no series showing such incidence exists. On this point the records of the Bender Laboratory offer some definite information. During a period of somewhat less than nine years 735 appendices removed at operation have been examined; five or 0.68 per cent. were examples of cystic dilation. These figures and those of Christian, which gave 0.42 per cent. for autopsy material, indicate that this lesion is relatively not infrequent.

The size of the tumor is variable. Virchow mentions a dilation the size of a man's fist; Kelly¹⁰ describes one the size of a small orange; and Guttman¹¹ one fourteen centimetres in length and twenty-one centimetres in its greatest circumference. As a rule, however, the size is stated to be that of a walnut, a goose egg, a hen's egg or a small sausage. The smaller localized protrusions occasionally described are in all probability diverticula.

The gross appearance of the cyst varies according to the location of the constriction. If the latter is at or near the caecum the cyst appears to be more or less continuous with the caecum and may have a tendency to an erect position. Occasionally the intra-appendiceal pressure may cause the cyst to protrude into the caecum. When the obstruction is some distance from the caecum the cyst has the appearance of a tumor with a pedicle connecting it with the caecum. Very rarely two cysts may develop. The walls may be thick and firm or thin and translucent. Adhesions to adjacent organs are common. The shape of the cyst is as a rule cylindrical, unless the structure is near the tip. Kelly and Hurdon¹² describe an appendix which was seen at operation six years before its removal. At that time in the median portion was a single cyst with obliteration of the

lumen beyond. Upon its removal after six years three cysts separated by fibrous partitions had formed; the later ones had developed in the proximal portion. The material within the cyst is, as a rule, a thick gelatinous substance so tenacious that, as Virchow states, it may be picked up with forceps and cut with scissors. As a rule this substance is more or less turbid, but occasionally it is distinctly translucent and of a greenish yellow color. Sometimes thin watery clear fluid or a thicker milky fluid is found. The material may be blood stained. The consistence of the fluid depends on the functional activity of the mucosa and is therefore an index of the degree of atrophy of the latter. If the cyst becomes infected, suppuration (empyema of the appendix) may result.

The mucosa is usually smooth and glistening with evidence of atrophy due to mechanical pressure. The finely granular velvet like surface due to the presence of lymphoid tissue is absent. Histologically the picture is that of a chronic inflammation and atrophy. Submucosa and lymphoid nodules have as a rule entirely disappeared. The mucosa is very thin, seldom contains glands and is usually represented by a layer of low columnar or cuboidal epithelium. In the muscular coat fibrous thickening, often hyaline, occurs, and infiltration of lymphoid cells is common. Occasionally small strands of fibrous tissue may bridge the lumen irregularly.

Cystic dilation is usually due to a chronic appendicitis in which, in the process of healing, opposing denuded surfaces become fused together and cause obliteration of the lumen. The secretion in the distal end accumulates and as there is no outlet a cyst results. The following description by A. O. J. Kelly of repair of appendiceal inflammation puts the matter very accurately: "That portion of the wall of the appendix which is the seat of erosion or ulceration is replaced by newly formed connective tissue, which like all newly formed connective tissue, tends to contract and to form cicatricial tissue. As a consequence the lumen becomes contracted. If there have been several points of ulceration, there will also be several points of stenosis of the lumen. Depending upon the situation, size, and shape of these cicatrices, there results either a transverse narrowing of the lumen, or, particularly if the cicatrix be longitudinal rather than annular, there will ensue a shortening of the organ along one side—a curling up of the appendix, or an angulation, flexure,

twist, etc. If there be several cicatrices, the utmost distortion of the appendix may be produced. On the other hand, there may be complete obliteration of the lumen of the appendix at one or more points along its length. It is readily conceivable that in the event of annular ulceration, granulating surfaces being everywhere opposed to granulating surfaces, these adhere, and, as the processes of regeneration and organization go on, become permanently united by means of newly formed connective tissue. Such obliteration of the lumen may be circumscribed or generalized. In the latter case obliterating appendicitis results; in the former merely a local obliteration. The latter may be situated anywhere, and not uncommonly gives rise to a condition known as cystic dilation, retention cyst, hydrops, or mucocele (Fere) of the appendix. The development of this condition of cystic dilatation of the appendix depends upon several factors. The obstruction of the lumen must be complete, or almost so: the obstruction or obliteration must have obtained at a time when the affected portion of the organ contained no pathogenic micro-organisms, the mucus membrane of the affected portion must be intact, or at least capable of functioning; and the secretion by the mucus membrane must be more rapid than the absorption from the portion of the appendix involved. If the obstruction be not complete, the secretion is likely to be forced through even a narrow opening with sufficient rapidity to prevent a large accumulation, and, on the other hand, infection is likely to occur through the patulous lumen, converting a cystic dilatation into an empyaema. If there are already virulent bacteria in the affected portion of the appendix, an empyaema, of course, rather than a cystic dilatation, will develop in the first place. If the mucous membrane is incapable of functioning, there can be no accumulation of fluid, and the same is also true if absorption be more rapid than secretion."

It is a matter of interest that in a case reported by Gruber¹³ a tuberculous ulcer apparently aided in bringing about complete stricture of the appendix.

It is obvious that it is only in connection with inflammatory obliteration of the lumen—a formation of synechia similar to that seen in various cavities of the body—that retention cyst can develop. It cannot develop in that form of obliteration which Ribbert and others regard as an involution process in a vestigial functionless organ for in such appendices the obliteration

tion begins at the tip and gradually involves the entire organ; there is, under such circumstances, no possibility of the retention of secretion.

Not all cases, however, are due to obliteration of the lumen. A cystic condition may be caused, as in the case reported by Treves and Swallow by a twist, kink or angulation of the appendix. Periappendiceal adhesions may assist in maintaining such a condition.

Other forms of cyst as the hydatid reported by Lafforgue and the subserous cyst mentioned by Christian do not come within the scope of this communication.

Clinically, cystic dilation gives rise to no pathognomonic symptoms and the condition is usually mistaken for some other form of appendicitis or is discovered accidentally. A palpable tumor in the right iliac fossa, as in the cases of Wier¹⁵ and Landenberger¹⁶ should, in the absence of acute symptoms, cause retention cyst to be considered. Aside from this the symptoms are usually obscure or suggestive of chronic appendicitis. Wood¹⁷ has called attention to the possibility of mistaking the tumor for floating kidney and also to the danger of rupture by taxis when the cyst is in an inguinal hernia. Such an accident is reported by Van Hook. Wölfer and McArthur¹⁸ each report a case of cystic appendix in the sac of a hernia.

There appears to be no relation between cystic dilation and cancer of the appendix, though both have an interesting relation to obliterative lesions. In a small proportion of the cases of cancer the tumor develops in an obliterated portion of the appendix, usually the tip of the organ. Obliteration at this point is, however, as a rule that due to involution rather than to inflammation. The only cystic carcinoma limited to the appendix, is the case of colloid cancer reported by Elting,¹⁹ if we exclude Rokitansky's cases, which in the absence of microscopic examination appear to be retention cysts. On the other hand Elting's tumor appears to be a primary lesion, for in the description, no mention is made of an obliteration of the proximal portion of the appendix. Furthermore, in cystic dilation the changes in the epithelial cells are those of atrophy rather than of proliferation.

Diverticulum of the appendix.—The condition known as diverticulum of the appendix has attracted but little attention. Ribbert appears to have been the first to report this condition. He describes a retention cyst on the surface of which, at the

mesenteric border, was a group of small cysts which he considered to be caused by the cystic dilatation of glands in the mucosa. Kelynack²⁰ reports a somewhat similar condition in which two diverticula were directed beneath the folds of the mesentery. Hawkins mentions an appendix with five or six diverticula. Kelly and Hurdon refer to a case in which the diverticulum was associated with retention cyst. Edel,²¹ Fischer,²² and Hedinger²³ each report single cases of diverticulum; Lejars and Menetrier,²⁴ two cases; and Mertens,²⁵ three cases in a series of 139 specimens examined.

In the cases above quoted, cystic dilation of the appendix existed in four, cancer in one, and tuberculosis in one. Periapendicular adhesions are frequently mentioned. Lejars and Menetrier describe an acute inflammation affecting the diverticula in one of their cases; to this condition they give the name of "appendicite diverticulaire." The size of the diverticula varies. In some cases they were found only on histologic examination; in others they are small nodular protuberances on the surface of the appendix. Lejars and Menetrier describe them as hemispherical elevations varying in size from that of a raisin to a small pea. The largest apparently is that of Fischer, which measures 11 x 12 millimetres.

It is a general rule that diverticula of various portions of the intestine occur in individuals past middle life; to this rule diverticulum of the appendix is not an exception. The age is given in seven of the twelve cases collected by Hedinger; in five of these it varied from sixty-six to seventy-five; in one it was forty-seven and in another fifteen. Ribbert states that the lesion which he reports occurred in an old man, while Fischer's was in an individual about fifty. On the other hand the appendix described by Hedinger was that of a newly-born child.

Most if not all of the diverticula of the appendix belong to the group of false diverticula, that is, they are a protrusion of the mucosa and submucosa through the muscular coat. The wall of the sac therefore has no muscular coat thus differing from true diverticula in which all coats are represented. False diverticula, as far as is known, are acquired and never congenital. It is of interest therefore to consider the conditions in the appendix which may be concerned in the etiology of diverticula. The association of obstructed lumen and cystic dilation in five of the cases, including the one here reported, strongly supports the

theory which ascribes the chief influence to increased intra-intestinal pressure; in this instance, of course, intra-appendiceal pressure. Likewise the frequency with which the processes penetrate the mesentery supports those observations which indicate that the diverticulum forms at the point of least resistance, that is along the sheath of a blood vessel (vein) passing from the intestine into the mesentery.

Traction is not believed to be a common cause of diverticulum though true diverticula of the intestine have several times been described as the result of traction exerted by accessory pancreas or connective tissue bands. Such traction on the appendix associated with inflammation, or the pressure of faeces, might lead to pressure atrophy of the mucosa and muscularis and a condition analagous to false diverticulum.

That diverticulum of the appendix may be congenital has been definitely determined by Hedinger's observation of the condition in a newly-born child.

REPORT OF CASES.

The records of the Bender Laboratory covering a period of nine years contain descriptions of 735 appendices removed at operation; among these are found four examples of cystic dilation, with also, in one, a peculiar form of diverticulum. Other diverticula of lesser degree may have occurred during this period, but if so have not been sufficiently characteristic to attract attention. The descriptions of these appendices follow:

Case I.—Records of the Bender Laboratory, Surg. Path. No. 49:60.

Clinical History—Mr. B., aged 16, admitted to the Albany Hospital Service of Dr. W. G. Macdonald, February 16, 1900. *Past history*—Negative. *Family history*—Negative. *Present illness*—Six weeks ago and again three weeks ago well-marked attacks of appendicitis, the second lasting two weeks. Attacks began with diffuse pain, starting in the region of the stomach, finally localizing in the right side. *Clinical diagnosis*—Chronic appendicitis. *Operation*—February 17th; uneventful recovery; discharged March 3d, cured.

Pathological Examination.—Gross Description—The specimen consists of an appendix removed at operation. It is 6 cm. in length; the proximal portion for a distance of cm. averages 7 mm. in diameter; the distal half is much enlarged, and measures from 13 to 16 mm. in greatest transverse diameter. The vessels of the peritoneal covering are much congested. The enlarged distal portion is distinctly cystic and on pressure a small quantity of mucoid material can be expressed through the narrowed lumen of the proximal portion of the appendix. The dilated por-

tion of the appendix is found to contain a considerable amount of gelatinous mucoïd material. On the side opposite the mesenteric attachment, the walls of the appendix are distinctly hypertrophied and the mucous membrane is thickened. Along the mesenteric attachment in the upper portion of the cystic enlargement the walls of the organ are greatly thinned and at one point is a minute opening 2 mm. in diameter, which is plugged with mucoïd material. On this side of the appendix the mucosa appears to be entirely atrophied for some distance. A similar atrophy of the muscular coat over a small area is also evident. Again at a lower point the material in the lumen of the appendix appears to have destroyed by pressure all portions of the wall except the peritoneal coat



Illustrates lesions of Case I. Larger cavity is that of cystic appendix with marked atrophy of mucosa and submucosa; smaller cavity is the diverticulum in the mesentery. (x 6.)

and has separated the peritoneum from the muscle for a short distance, forming a small cystic cavity 4 mm. in diameter, the walls of which are somewhat irregular. At a point 14 mm. from the beginning of the dilation of the appendix the lumen rapidly narrows until it measures but 2 mm. in diameter. This condition extends for a distance of about 4 mm., when the lumen again enlarges to form a dilation 8 mm. in length, and 7 mm. in transverse diameter. The walls surrounding this area of dilation are hypertrophied and the mucous membrane in some places is somewhat thickened, in other places apparently atrophied. Toward the tip of the appendix the dilation of the lumen ceases; the lumen of the extreme tip is obliterated.

Anatomical Diagnosis—Chronic appendicitis with cystic dilation of distal end.

Histologic Description—Sections through four different levels of the cystic dilation were studied. Unfortunately no sections were taken through the constricted portion. To the naked eye sections from each level show in the attached mesentery a circular opening, which at first glance apparently a blood vessel, proves when placed under the microscope to be a cavity lined by a mucosa similar in every respect to that of the appendix proper. This diverticulum varies in diameter in the hardened and stained preparation from 0.15 to 0.35 cm; its form is almost uniformly circular though occasionally oval.

The lumen of the appendix proper is dilated, and that portion of its wall most distant from the mesentery is much thickened. The lumen is free except for small masses of mucoïd material adherent here and there to the mucous membrane. The character of the latter varies at different levels, but atrophy is everywhere a prominent feature of the lesion. The surface epithelium is of the cylindrical goblet cell type and forms an unbroken ring about the entire circumference of the appendix. This surface epithelium is directly continuous with that of the glands opening into the lumen. These glands are all lined by the same tall cylindrical cells with clear periphery. Many of the glands are small and irregular; others are dilated, forming small cysts in the mucosa. Opposite the diverticulum they have almost entirely disappeared. The interglandular tissue of the mucosa is rich in eosinophiles. The lymphoid nodules are very small, appearing usually as narrow elongated patches; on the mesenteric side they are entirely absent. The submucosa is very indistinct and slightly infiltrated with lymphoid cells and eosinophiles, as are also the muscular coats and the subserous tissues. The blood vessels of the latter are numerous and greatly congested. On the mesenteric side, between the diverticulum and the appendix proper, the muscular coat is much thinner than on the opposite side.

The diverticulum lies outside the muscular coat in a loose vascular adipose tissue freely infiltrated with lymphoid cells. The mucosa of the diverticulum is very similar to that of the appendix itself, though the glands are smaller and fewer in number, and the surface epithelium is not so markedly of the "goblet cell" type. A delicate muscularis mucosa, and submucosa are evident, as are also a few small accumulations of lymphoid cells, which however bear no resemblance to lymph follicles. Eosinophiles are numerous. No muscular coat can be seen at any level; the diverticulum is thus of the type characterized as false.

Microscopic Diagnosis—Chronic appendicitis with cystic dilation and false diverticulum.

By comparing the gross and histological appearances it is apparent that this diverticulum ran through the greater portion of the cystic dilation. Unfortunately owing to the fact that it was not recognized upon gross examination its exact length and its mode of termination cannot be determined. It appears

justifiable to conclude that the small opening plugged with mucus at the upper portion of the dilation noted in gross examination was the point of origin. From here it passed apparently through the muscular coat and instead of protruding any distance into the meso-appendix, passed downwards in close relation to the muscular coat. As it is seen in four different sections taken at various levels of the dilation it must have passed almost to the tip of the organ which would give it a length of about three centimetres. Whether it terminated blindly or communicated again with the lumen of the appendix cannot be determined. The possibility of the latter is suggested by the small irregular dilation of the end of the appendix noted in the gross description.

Case II—Records of the Bender Laboratory. Surg. Path. No. 49:76.

Clinical History—Mrs. G., aged 50, patient of Dr. Albert Vander Veer, Albany Hospital. *Family history*—Negative. *Past history*—Always more or less constipated. *Present illness*—For the past three or four years has had colicky pains in right lower abdominal region. Three months ago the patient had a well defined attack of appendicitis, with constipation, pain and vomiting. Enemata were given, and the patient made a good recovery. An operation was advised, but postponed temporarily.

Operation by A. Vander Veer, December 26th. On opening the abdominal cavity, a small amount of serous fluid escaped. The appendix was found back of the caecum and bound down by adhesions.

Pathological Description.

Gross Description—Specimen consists of the distal 3 cm. of an appendix. The proximal end has very thick walls and the lumen is almost entirely obliterated for a distance of 5 mm. Below this the organ is enlarged, averaging 14 mm. in diameter. There are a few adhesions over the serous surface. The peritoneum is injected, and there are a number of discrete and confluent pin-point subperitoneal haemorrhages. At one place the wall is thin, and presents a perforation 3 mm. in diameter with irregular edges. (This perforation was produced artificially after removal of the appendix.) On section the mucous membrane of the distal 2.5 cm. is pale and covered with a yellowish, almost transparent jelly-like colloid material. The remainder of the mucous membrane is smooth and free from this material. The walls of the organ are considerably thickened. The musculature averages 4 mm. in thickness. In the neighborhood of the perforation the wall is very thin, the mucous membrane and musculature have entirely disappeared over an area 4 mm. in width. The mesentery, which accompanies the specimen, is deeply congested.

Accompanying the specimen was a large mass of colloid material, yellowish red in color; and distinctly striated. The reddish color present is apparently due to the presence of blood or blood pigment.

Anatomical Diagnosis—Chronic obliterative appendicitis with cystic dilation.

Microscopic Description—A section through the proximal end shows the normal structures of the appendix to be entirely obliterated by a chronic inflammation, which leaves only a narrow slit-like opening lined by a very low cylindrical epithelium. The glands and lymph nodules have been entirely destroyed, and the submucosa has been replaced by a dense connective tissue more or less hyaline in character. The muscular coat is very thick and replaced in part by fibrous tissue. Lymphoid cells are numerous throughout all coats. The serous coat is thickened and adherent to it are numerous vascular fibrous tags. In the submucous, muscular and serous coats of a lower level is seen the same chronic inflammatory condition as in previous section. In the center of the section is an irregular lumen much smaller than normal, which contains blood stained colloid material. The mucosa consists of low irregular papillary projections lined by three or four layers of cylindrical cells; no glands are present.

A section through the point of greatest dilation shows an area of chronic ulceration in intimate contact with the colloid contents of the lumen. The colloid material which stains deeply with haematoxylin is clear and hyaline with a more or less stratified arrangement, and contains no cells.

Case III—Records of the Bender Laboratory, Surg. Path. No. 49:212.

Clinical History—Mr. D., aged 36, admitted to the Albany Hospital, service of Dr. Albert Vander Veer, on June 9, 1902. *Family and past history* negative. *Present illness*—Attacks of sudden abdominal pain in August, 1901, and four similar attacks since. Now presents symptoms of acute appendicitis. Operation June 10th; appendix deep in pelvis and firmly bound by adhesions.

Pathological Examination—Gross description—Specimen consists of the distal portion of the appendix vermiformis, and is 4 cm. in length and irregularly distended. The outer wall is roughened with blood stained fibrous adhesions. The diameter of the tube at proximal end is 1.5 cm. On section the lumen of the appendix is found to contain a colloid substance, which can easily be expressed; the wall is thickened. The mucous membrane appears thickened and oedematous, and near the tip the mucous membrane forms a small pouch-like dilation, which is filled with colloid material.

Anatomical Diagnosis—Chronic appendicitis with localized cystic dilation.

Histological Examination—Two sections through proximal portion of the appendix show evidence of chronic inflammation involving all coats of the organ. The serosa is thickened, and to it are adherent numerous vascular tags of fibrous tissue. The mucosa is atrophied and contains a few small irregular glands widely separated; the surface epithelium has almost entirely disappeared; the lymphoid nodules are small and irregular. The lumen contain a colloid material with fragments of desquamated epithelial cells. A section through the dilated portion shows the same general condition, and in addition, a cavity 4 mm. in diameter between the muscular and serous coats. This latter cavity contains a material which

is similar to that in lumen of appendix, but is richer in cell debris and contains red blood corpuscles. Its epithelial membrane has almost entirely disappeared, but here and there are small accumulations of cuboidal epithelium; no glands are evident. The surrounding tissue is freely infiltrated with lymphoid and plasma cells and a few polymorphonuclear leucocytes. Much old blood pigment is present. This cavity is apparently the periphery of the cystic dilation mentioned in the gross description; unfortunately, the section does not pass through opening into appendix proper.

This case presents a few points of peculiar interest. No cause for the retention of secretion was evident either upon gross or histological examination. A constriction may have existed at the junction of appendix with caecum, or a twist may have been present. Unfortunately the clinical notes contain no reference to the conditions found at operation other than that the appendix lay in the pelvis and was bound down by adhesions. The histological picture, however, justifies the diagnosis of cystic dilation. The small pouch at the distal end must be considered as a false diverticulum. In view of the observations of Lejars and Menetrier concerning "diverticular appendicitis" it is of interest that in this pouch we have an ulcerative inflammation which though of a chronic character is more active than that in the appendix proper.

Case IV—Records of the Bender Laboratory, Surg. Path. No. 04:123.

Clinical history—Mrs. H. T., aged 60, admitted to the Albany Hospital, service of Dr. A. W. Elting, February 18, 1904. *Family history*—Father living. Mother died at 22 after amputation of knee for tuberculosis. *Past history*—Had pneumonia in 1891. Has had two living children and one miscarriage. Always had painful menstruation. Menopause at 47. *Present illness*—About 25 years ago patient noticed a pulsating tumor in median line of abdomen, and on exertion had severe pain in epigastrium and thorax with dyspnoea. At the same time she had occasional attacks of vertigo, but never became completely unconscious. In August, 1903, she was confined to bed for three weeks after severe attack of pain in the abdomen. At this time the pulsation disappeared, though swelling remained in median line of hypogastrium. There was difficulty in micturition and defaecation. Micturition was frequent. Appetite good. No history of vomiting.

Patient on admission was found to be a very small framed, poorly developed and poorly nourished woman. Skin and mucous membranes pale. Pulse 100; low tension; poor quality. Wall of artery somewhat thickened. Lungs slightly emphysematous. Heart negative. Abdomen decidedly prominent, particularly in the lower portion. Prominence appears to be symmetrical, and seems to emerge from the pelvis. On palpation a large tumor mass can be felt, which apparently occupies the

entire pelvis and projects upward to about the level of the umbilicus. This tumor is of rather firm consistence and somewhat irregular outline. It does not appear to be at all moveable. There is some tenderness on palpation over the tumor. Distention of the intestines is evident, and the action of the bowels has been extremely sluggish. *Operation*, February 20th. Median incision between the umbilicus and pubes exposes a cyst lying in the pelvis and found to be adherent to adjacent structures. On opening the cyst about 1,000 cc. of semi-solid gelatinous material can be removed. Left tube and ovary removed. Dilated appendix with a portion of caecum, supposed to be a colloid cancer of the appendix, dissected away.

The patient recovered satisfactorily from the shock of the operation, and her convalescence was uninterrupted.

Pathological Examination—Gross description—Material received as two separate specimens. Smaller specimen is an appendix, the distal end of which is enlarged to form a globular cyst 3.5 cm. in diameter. The proximal portion 3.5 cm. in length has an outside diameter of from 0.8 to 1.2 cm., and has a patent lumen. The entire specimen is covered with blood stained fibrous tags. The wall of the cystic portion is 2 mm. in thickness, while that of proximal portion measures 3 mm. The cyst contains an amber colored jelly-like material. Specimen not further examined, but placed in fixation fluid.

Larger specimen consists of approximately 1,200 cc. of thick dark amber mucoid material and a collapsed cyst wall. The latter when distended measures 14 cm. in its greatest diameter. Its wall is 1 to 2 mm. in thickness. Attached to this piece of cyst wall by bands of fibrous tissue is a portion of normal Fallopian tube 6 cm. in length.

Anatomical Diagnosis—Colloid cyst of appendix. Unilocular cyst of ovary. Normal Fallopian tube.

Microscopical Description, Appendix—Lumen greatly dilated. Mucosa and submucosa atrophied. Mucosa is so stretched that tubules are very shallow or entirely obliterated, and form a continuous layer with irregular projections into the submucosa. No isolated glands are present. The epithelial cells are elongated, compressed and practically all of the goblet cell type. In some places the glandular appearance is entirely lost, and the lining epithelium consists of but a single layer of low cuboidal cells. The lumen is filled with an almost homogeneous hyaline material, which stains faintly with haematoxylin. The lymphoid nodules are atrophied and few in number. The muscular coat shows increase of connective tissue and slight infiltration of lymphoid cells.

Microscopic Diagnosis—Colloid retention cyst of appendix.

In this case as in the previous one the cause of the retention is not apparent. The portion of appendix received from the surgeon showed the lumen of proximal end to the patent and the description of the operation makes no mention of obstruction. It is possible that the large ovarian cyst may, by pressure, have caused an obstruction or kink of the appendix, but on this point there is no information.

The following case of colloid deposit about the appendix, though it illustrates neither cystic dilation nor diverticulum, is believed to be of some interest because of the possibility of confusing it with a ruptured cystic appendix.

Records of the Bender Laboratory, Surg. Path. No. 58:119.

Clinical History—Mrs. B., aged 40, admitted to the Albany Hospital, service of Dr. W. G. Macdonald, on September 2, 1903. *Family history*—Father and brother died of tuberculosis. No history of cancer. *Past history*—Patient had the usual diseases of childhood. Her menstruation began at 13, and has always been regular. She had two children and one miscarriage. She had "inflammation of the bowels" at the age of 12 years. At the age of 20 she was troubled by bleeding from the bowels. For the past two years patient has suffered from indigestion. She has always been more or less constipated. *Present illness*—On the 28th of July the patient felt perfectly well and spent most of the morning out of doors. She ate a hearty dinner, and at three o'clock in the afternoon was taken ill with severe pain in the right iliac region. At this time she vomited once. In a short time she complained of pains throughout the abdomen. At midnight she took an enema with good results. The next day a physician was called, who made a diagnosis of chronic appendicitis with pelvic inflammatory disease, and advised operation.

Operation, September 3d, by Dr. W. G. Macdonald. Incision in the median line between the symphysis and umbilicus. The appendix was found bound down by adhesions. There was an ovarian cyst on the right side. Operation consisted of repair of the cervix, curettment of uterus, clamp cautery for haemorrhoids, right salpingo-oöphorocystectomy and appendectomy.

Pathological Examination—Gross description—Material to be examined consists of appendix and Fallopian tube with broad ligament.

The appendix is of normal size with mesentery attached. The peritoneal surface is blood stained and congested. All coats are greatly thickened; the mucosa is swollen. At tip, externally, is an accumulation of thick colloid material intimately adherent to appendix and apparently covered by peritoneum. No evidence of rupture or perforation.

The Fallopian tube is swollen, and its walls thickened, its peritoneal surface injected, and its lumen contains a thin purulent fluid. Near distal end in the broad ligament is a thin walled cyst 6 cm. in diameter, containing clear slightly yellow mucoid fluid. Ovary absent.

Anatomical Diagnosis—Colloid mass about tip of appendix. Cyst of broad ligament; chronic salpingitis.

Microscopic Examination—Appendix—The mucosa and submucosa are normal. The muscular coat appears to be greatly thickened. Intimately adherent to the serosa, and equalling the section of the appendix in size, is a roughly circular mass of colloid material taking a faint haematoxylin stain. This mass is partially organized, having an alveolar appearance, due to septa of new formed connective tissue. Numerous new formed blood vessels penetrate the mass at various angles, and there is considerable infiltration with lymphoid cells and polymorphonuclear leu-

cocytes. Adherent to this mass and connecting it with the appendix, as well as to the adjacent adipose tissue, are strands of newly formed connective tissue.

Fallopian tube—Lumen contains pus cells and granular material. Papillary processes largely destroyed; those remaining are infiltrated with lymphoid cells and leucocytes. This infiltration extends through all the coats. The serosa is thickened and cedematous.

Microscopic Diagnosis—Organizing mass of colloid adherent to appendix. Chronic salpingitis.

At first glance the condition just described was supposed to be either a ruptured colloid cyst of the appendix or a colloid cancer. Careful gross examination ruled out the first and microscopic examination the latter. The absence of either acute or chronic inflammation of the inner coats of the appendix would contraindicate an explanation based on the supposition of a previous rupture. The appearance of the mucosa was not that of retention cyst. It is apparent, therefore, that the material about the appendix can be considered only as an accumulation resulting from the rupture of a colloid cyst elsewhere in the abdomen. A cyst of the ovary or broad ligament would appear to be the most probable source. The operator noted a cyst on the right ovary and the gross examination of the tube revealed a cyst of the broad ligament. It is possible that a third cyst, which in its collapsed state, escaped observation may have been the source of the colloid material. The sudden attack of severe abdominal pain, in the absence of previous symptoms, is very suggestive of the rupture of a cyst with the escape of its contents into the abdominal cavity. The degree of organization in and about the colloid material was about what would be expected in the period which had elapsed.

Rupture of ovarian cysts leading to interesting secondary lesions in the abdomen, although by no means common, is a well understood condition. The localization of the cyst contents about the appendix and its discovery at operation are, however, very unusual.

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Editorial

One cannot open a medical journal nowadays without being amazed and dazed by the prolific coinage of verbal monstrosities, acrid enough sometimes to set teeth on edge. Every cut which the surgeon makes is a magniloquent *ectomy*. No one does so simple a thing as excise a uterus; he performs *panhysterectomy*. If he cuts into or cuts out a stomach and duodenum it is a *gastroduodenectomy*, and if he does this by a more skilful cut than heretofore it is a *gastropyloduodenectomy*. Then there is a *colpohysterectomy*, and more mouth-filling still, a *panhysteromyomectomy*, in which, if I understand it, the *myomectomy* does not mean to cut away muscle, but to cut out a *myofibroma* in muscle; and so on with a *dacryocystorhinectomy*—to cure a purulent *dacryocystitis*, and similar tongue-wrenching *ectomies*. Nor indeed is the physician at all behind in the race of pitiful ambition. Medical literature bristles with such terms as *eosinophilia* for a dubiously characteristic blood state of *ankylostomiasis*, *myasthenia gravis pseudoparalytica*, *splenomegalic polycythaemia*, *pseudoleukaemia*, *gingivitis*, *visceroptosis*, and—latest flowers of medical culture—*poltophagic* for one who chews his food, *psomophagic* or *tachyphagic* for one who bolts it; for such is the inventive zeal, that not the disease only, but every symptom of it, is in a fair way to get its uncouth name, offensive alike to eye, ear and mind.

**Dementia
Praecox**

The term "dementia praecox" was first proposed by Schüle in 1886 as descriptive of individuals with inherent mental defect by which development is retarded beyond the age of puberty. Kraepelin later applied the phrase to a much larger group of cases, or, more correctly, included several groups under the same class. So that for ten years the psychiatric world has been struggling to determine to just what patients the diagnosis should be applied, and whether or not any demonstration of insanity might be called by any other name. As one English writer wailed, "In America they call everything dementia praecox, from idiocy to general paralysis." Fads in medicine are no less numerous in nomenclature than in drugs or apparatus, and there are now some faint indications that this awkward phrase has had its day. We are fortunate in having, before its disappearance, a concise and lucid analysis of its significance. In the *Journal of Mental Science* for October, 1905, Dr. Thomas Johnstone, who made the excellent English translation of Kraepelin's "Clinical Psychiatry," defines the term. He regards dementia as a "permanent psychic disability, due to a neuronc degeneration, following insufficient durability." The word "praecox" may mean "youthful," "early," or "premature." If the decrease in durability be slight, a dementia ensues in old age; if it be more marked, it occurs at climacteric; if still more marked, it will occur at maturity; and if it be very marked, it will appear at adolescence, or even at puberty.

Dr. Johnstone then refers to the following historical instances of peculiar mental development and involution: Hermogenes, who at fifteen years of age taught rhetoric to Marcus Aurelius and triumphed over the most celebrated rhetoricians of Greece, did not die early, but became demented at twenty-four years. Henri Heinekem, born at Lubeck in 1791, was also a marvel. He spoke distinctly when ten months old; when one year old he could repeat the Pentateuch by rote, at fourteen months was perfectly acquainted with the Old and New Testaments. From hearing him converse in Latin Cicero might have regarded him as an *alter ego*, and he was equally proficient in some modern languages, but died during his fourth year. At the other extreme of life we have Hippocrates, Galen, and Asclepiades, all illustrious members of our profession, surviving 100 years, and

leading intellectually healthy, vigorous lives, with no indication of even a normal dementia, or postponed dementia!

The author gives the following description of the symptoms of dementia praecox:

Speaking generally, hallucinations and delusionary or delirious ideas appear more frequently in older people, and they are not so rapidly fatal as the cases occurring among the young. There is usually a history of neurotic inheritance. The symptoms in the early stages may be marked only by irritability, or a desire for solitude, or by slight states of apprehension, depression, or excitement, but as the disease progresses we get a kind of moral anaesthesia and emotional indifference, with carelessness and slovenliness as to personal appearance, or habits, or the ordinary observances of civilized life.

Later, so-called katatonic symptoms (the insanity of muscular rigidity or tension) appear, such as slowness and hesitation in movement from psychical restraint (an impediment of volition), a massive opposition to all motor impulses, inertia or stupor; then there may be abnormal suggestibility (excessive docility or imitative activity), restlessness, the continuous repetition of acts or movements (marching backward or forward like a beast of prey in a cage), or simply repetition of phrases of speech, fits of tears or laughter (without any obvious appearance of grief or joy); or there may be sudden impulses, extravagant gesticulations, or peculiar cataleptic or other attitudes. The most commonly observed are grimacing and smiling efforts at penning, negativism (resistance), stereotypism (foolish repetition), and automatic obedience, by some called automatism.

The patients' mode of shaking hands is peculiar; by a series of jerks they stretch their hand to meet the other person's, which they may touch or faintly grasp, but hardly ever shake. Occasionally automatic obedience and negativism are combined in the same patient; thus, when they do open their mouth to show their tongue, they roll their tongue back to the pharynx to prevent its being seen, or they may try to speak with their mouth tightly closed. They may have also what appears to be forced dumbness. These three combined symptoms are in reality psychological but no clinical contrasts.

The purely physical or motor signs are rigidity, increased knee-jerks, and occasional irregularity of pupils. When the disease attacks older people, in addition to the more frequently observed

symptoms, other psychical manifestations or disturbances are, so to speak, "thrown in," such as delirious or delusionary states, disorders of the senses, and alternating states of depression, excitement, or katatonic stupor. It is in this way that subdivisions or varieties of the condition have been constituted, such as hebephrenia, paranoidal and simple states. This is perhaps to be regretted, because in ordinary medicine such subdivisions do not necessarily occur; for although it is well known that measles may terminate by acute laryngitis, catarrhal pneumonia, or a subsequent phthisis, and also that scarlet fever may prove fatal by acute nephritis or a septicaemia akin to rheumatic fever, these two diseases are not subdivided into varieties.

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

The semi-annual meeting of the Medical Society of the County of Albany was held in the Albany Medical College on the evening of October 10, 1905, at 8:30. The President was in the chair. The following members were present: Drs. Bedell, Bendell, Boyd, Classen, Cook, Curtis, Elting, George, Gutmann, Griffin, Hacker, Jenkins, Lempe, Lipes, Lomax, MacFarlane, McGarrahan, McKenna, Mereness, Moore, C. H., Mosher, Moston, Murray, Papen, G. W., Shaw, Skillicorn, Theisen, Traver, Ward, Wiltse, Winne, C. K.

Dr. WARD moved that the minutes of the last meeting be accepted as printed in the ANNALS. Seconded. Carried.

The Secretary presented the applications for membership of Drs. M. A. Newell, W. G. Keens, L. K. Baldauf, A. F. Holding, G. W. Papen, Jr., G. E. Beilby and J. M. Adee, all of which had been favorably reported by the Board of Censors.

Dr. BENDELL moved that the Secretary be directed to cast one ballot electing the above named applicants members of the Society. Seconded. Carried.

The Secretary cast the ballot, and the President then declared all the applicants elected to full membership in the Society.

Dr. J. F. MCGARRAHAN then read the Vice-President's address, which has appeared in the ANNALS.

DRS. ELTING, LEMPE and WARD spoke in discussion.

Dr. SARAH McNUTT, by invitation, read a paper on "Some Problems of Minor Gynecology."

DRS. ELTING, BOYD and SAMPSON spoke in the discussion.

On motion, the Society adjourned.

W. H. GEORGE, *Acting Secretary.*

[Minutes received for publication November 11, 1905.]

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A special meeting of the Medical Society of the County of Albany was held in the Albany Medical College October 24, 1905, at 5 P. M., the purpose of which was to take action on the death of Dr. J. D. Featherstonhaugh of Cohoes. The meeting was called to order by the President. There were present: Drs. Archambault, Bendel, Boyd, Curtis, Daunais Griffin, Jenkins, Lipes, McGarrahan, Mitchell, Mosher, Murray, Pease, Peltier, Tucker, Ward, Witbeck, C. E.

Dr. WITBECK spoke as follows:

Mr. President.—It is with feelings of inexpressible sadness that I say a few words in eulogy of Dr. James Duane Featherstonhaugh. Though his death was not unexpected, it came however as a shock at the last. Dr. Featherstonhaugh has long been a sufferer from a painful and fatal malady, to which there was but one termination. Patient to the last, he accepted the inevitable with the fortitude so characteristic of the man. Not yet old in years, rather in his full maturity, he has been taken from us. Words cannot fittingly express the feeling of loss which we have sustained. Not only as a physician will he be missed, but also as one who took a large interest in public affairs. As a citizen he was first and foremost in every good work to advance the interests of the commonwealth; always taking an active part in educational matters and municipal government. As a member of the medical profession he has long been identified with us. You all know how well he fulfilled his part as a physician and surgeon; how solicitous he was for the success of the Cohoes Hospital; how indefatigably he worked for its interests. Associated with the staff from its inception he was a most earnest and efficient member. Loyal to the Cohoes Hospital and with all connected with it, I cannot but feel that in this, the first break in the official board, our loss is great. He never failed in his duty as it was given him to see it. The Hospital, the Training School for Nurses and we his brother physicians bear willing testimony to this.

Dr. Featherstonhaugh was born in Washington, D. C., 1845. His very early boyhood was passed in France and England. A graduate of Union College in 1867, of the College of Physicians and Surgeons, Columbia University in 1870, he came to Cohoes the same year, and since then has practiced his profession there. Of the physicians practicing at that time in Cohoes I am the only one living. Therefore, I speak of him as one who has known him long and well. Very intimate were we then in the early days. We had our trials and tribulations, but our friendship remained until the last. Of delightful manner, he always was the courteous gentleman, with a personality which adapted itself to all its surroundings, and which made him most agreeable to all who came in contact with him. A lover of books, and a great student, he could quote line upon line from his favorite authors. Only a short while ago sitting by his bedside, he became reminiscent, and talking of his life, the changes that had taken place during the years that had passed and gone,

he repeated to me these lines. I shall never forget his earnest manner. It embodied so much to him:

A little work, a little play
To keep us going—
And so, Good day.

A little warmth, a little light
Of loves bestowing—
And so, Good night.

A little fun to watch the sorrow
Of each day's growing—
And so, Good morrow.

A little trust that when we die
We reap our sowing—
And so, Good Bye.

Dr. MITCHELL said that one of the most praiseworthy traits of Dr. Featherstonhaugh had been his care and solicitude for the improvement of his adopted city for many years. He was himself entirely honest, and would tolerate no dishonesty in those in his employ or under his governance. His work will live after him, for it was his sturdy courage that made possible the building of the new sewage disposal plant. He was beloved of both the profession and the people.

He was always willing to aid the worthy poor, and his charity was of that sort that the left hand knew not what the right hand did. He was an excellent man and a worthy physician.

Dr. BENDELL said that to be most eloquent on an occasion of this sort is to be silent. But he felt that he could not allow the occasion to pass without adding his mite of tribute. He had known Dr. Featherstonhaugh for twenty years, both as a friend and as a physician. One thing had often grieved him, and he often spoke about it sorrowfully. This was the almost constant strife among some members of the profession. He felt that the calling of medicine was more noble than the giving of physic and that its professors should show example to the people in all things. Himself, he spoke ill of none, and he was not surprised to hear that he died fearlessly, for his life was a constant preparation.

Dr. BENDELL then moved that a picture of Dr. Featherstonhaugh be placed in the ANNALS in the same number in which the minutes of the meeting appeared. Seconded. Carried.

Dr. ARCHAMBAULT then spoke as follows:

Sad is the event which brings us together.

For we are here assembled to bow down before the majesty of death.

Seldom has death dealt in our ranks a heavier blow.

And yet, to the one who fell victim, who could say that the summons was not a welcome message of the angel of Deliverance?

For some time past every one in the profession had come to know that our esteemed confrère, already in ill health for about a year, was stricken with an unrelenting disease, and the end of his tortures was anxiously awaited for. It was said that, for a long time, he had no true insight of the nature of his illness. Let us hope that to the end he remained possessed of such a soothing illusion. Real or illusive, the hopeful utterances in which he often engaged in the presence of his intimate friends, might have been construed by them as an expression of his apparent confidence of an ultimate recovery. In any case, whether he had, or not, a full comprehension of the uneludable gravity of his condition, little did he betray of his impressions; and most of those who were admitted to his bedside, even towards the very last, never saw beneath his rather grave and impassive countenance but a serene and undisturbed mind.

Our confrère was a truly remarkable personality, one of the most worthy of the generation to which a few of us belong—a generation which to-day stands on the treshold of old age. He possessed the originality, in days when the climbing up to the top is so harsh and daring, to be satisfied with his lot, and to delight in living modestly outside, and just at the door of, the large cities where his talents, his aptitudes, his strong intellectuality, his rare endowments, both of mind and heart, would have justified his aspirations to the first rank. This attitude was of a sage, inasmuch as, in the end, he is gone as a great citizen, carrying away with him the esteem, the consideration and the profound regrets of a whole city.

He is gone at relatively no very advanced age, in full maturity of his rich faculties, at the very moment when he could give the entire measure of his strength. Thus does it seem that he was recalled before his time, though he lived long enough to fill most worthily both his professional and his civic life.

In the surgery of accidents—mention being made only of this part of the field of his professional activity—and in this surgery, if we consider in particular the complicated cases of mutilation of the hands, he had acquired a masterly competence. Great opportunities were given him as physician of our large manufacturing corporation, the "Harmony Mills;" and in that special work the void his sickness and death have produced, is yet unfilled.

His intellectual attainments, his high social standing and his full possession of the "*Aurea Mediocritas*" brought him also to the front when, at last, rang out for Cohoes the hour of our great and much needed "Public Improvements;" his time, his good will, his well trained and observing mind, his well-informed intelligence, were liberally called upon; and it became the more easy for him to respond, that such questions as hygiene and sanitation had always appealed to him and formed part of his favorite investigations.

But it is still more in private life that the light of this good man shone most auspiciously. His society was exceedingly easy and amiable. Whoever enjoyed the privilege of his acquaintance, either close or distant, never failed to highly appreciate the extreme distinction of his

manners and his exquisite politeness. His courtesy was proverbial. Felicitous he of whom, in such a matter, it may be said, in quoting him to others: Polished as that man was! Gentle, affable, he was ever ready to blend with a benevolent kindness, and even at times with an unswerving indulgence, the oftentimes so difficult and so trying discharge of the professional duty. And yet he nigh well knew, on the occasion, how to spice his discourse with the sharp edge of a becoming irony. His conversation thus seasoned with a bit of attic salt, a pungent word, a reminiscence of school-time, a classic quotation, would then roll on in a most charming manner.

And this is a point on which we beg to insist. Our conféré was a man of erudition; in a word, he was a scholar. He loved his old books—and, as precious gems in an artistic setting, their witty sentences or immortal verses found in his richly adorned mind a natural fitting.

There are men who crave to give themselves up to the crowd, who are fond of lavishly spreading themselves out. The characteristic of our associate was to seek the intimacy of a book and a few friends. Outside of his professional work, and of the time, very limited after all, which he devoted to the *res publica*, the disinterested culture of literature, so well calculated to embellish existence, was for him a passion. He was a critic of high order; he excelled in pointing out the slightest digressions of style, the least deflection of the phrase, and in teaching the value of the right word in the right place. He cultivated with delight the acquaintance of the great writers. We know, for example, that, to read in the original, the great master minds of French thought, he made a laborious study of the language of Bossuet and Corneille, and attained by the mere resource of this effort familiarity enough with the language to enjoy its best productions. A good book was for him a friend that we put in the place of honor, with whom we chat, argue, and whom we admit to the most intimate confidence. Our feverish generation, given exclusively to the struggle for life, values but vaguely the voluptuousness which certain souls experience in this kind of enjoyments. These enjoyments are, however, not within the reach of all. Even education and the aesthetic sense do not suffice to relish them fully; there must be united a certain sensitiveness of heart and a virtuous elevation of the soul.

This noble existence would not have been sufficiently complete had it not received the seal of adversity. At the moment when all smiled upon him, sad hours cast themselves into his life, for at one and the same time, sickness, suffering and death installed themselves at his fireside. When himself riveted to his sick bed by this malady already inexorable, merciless death came, in April last, and dealt him its most terrible blow. From him, from his side, from his very heart, was suddenly snatched the inseparable companion of his life. Endowed with a tender and elevated soul, he felt at that moment, as every one knew, all the crushing weight of an inconsolable grief. For, in reality, nothing on earth is comparable to sweet domestic life, in the pure atmosphere which surrounds an accomplished woman.

Now that he is no more, for us who have been his contemporary and who have walked with him in parallel paths during the past thirty-five

years, the departure of this distinguished confrère only magnifies the already intense feeling of all the sorrows which, after all, form the inevitable allotment of our existence. But, as he repeated to us one day: "*Non omnis morior!*" It was a long time ago that, in a moment of effusion, he thus quoted the Latin poet, but we remember that happy moment as if it were but yesterday. His mind, ever eager of subtle questions, was turning, through a half playful, half serious dissertation, towards the formidable heights of metaphysics. Yes, we remember that day and that cry of his soul: *Non omnis morior*. This thought worried him. Was there need of it? Certainly, in time, he gave a graver consideration to this perplexing problem, and, no doubt, at the supreme moment, a more acute perception of its truth penetrated and fortified his mind. No, indeed. All does not in reality die in us. He does not die entirely who leaves the example of an honorable career.

Thus, besides the intense regrets of the final parting, those among his confrères who have been most in his intimacy, will find in their hearts the sense, infinitely painful, of a great void and of the loss of a friendship the more valued that it was the more concentrated. Hereafter, they shall not meet without feeling their hearts oppressed as the physiognomy of the departed will vividly evoke itself in their minds in a radiation of graceful affability. They shall long cherish the remembrance of a friend who, despite an apparently cold and somewhat solemn exterior, was however the impersonation of a nature most refined and most sympathetic.

One deep sorrow of life, and more so yet of mature age, is the departure of companions, who are not replaced and who live no longer but in memory. This one, at least, has departed—such is our conviction—as one of those who entertain the consoling hope that the close of our life, so full of mystery, opens on eternal splendors.

Dr. CURTIS said that he was gratified to hear the eulogies of Dr. Featherstonhaugh. He was gratified at this as he was surprised to see the concourse of people filling the church at the funeral.

The medical profession had been honored by such a man as Dr. Featherstonhaugh. To the older men of the profession it comes at least as a great loss, which we, in this city, experience, but which falls especially heavy upon those in Cohoes. He had a special grace of manner which is not equally given to all of us. We all honor him; we all regret him; let us all keep him in mind for what he was—a gentleman.

Dr. WARD said that while he could not class himself among Dr. Featherstonhaugh's intimate friends, he knew him as a type of the Christian gentleman.

Dr. MURRAY said that he thought he perhaps knew Dr. Featherstonhaugh better than anyone else in the Society. They had entered Union College together, and had been together constantly thereafter until the time that they both entered upon professional life. He had also been the means of sending Dr. Featherstonhaugh to Cohoes when that place was not what it is to-day. More than all that could be said of him his character spoke for itself.

Dr. TUCKER said that he felt some hesitancy in speaking about Dr. Featherstonhaugh because of the fact that he was a friend so near and dear that were he here he might not approve. He was a man of such distinguished address that we shall not soon look upon his like again. He was born of distinguished ancestry, and yet he did not pride himself upon his descent. But he, in his life, lived up to the best elements in the life of those who preceded him. During the fifteen years when he was one of the curators of the college, an office now abolished, he served with great zeal and fidelity. All his other duties were discharged in the same manner. Socially he had most admirable traits, so that the few intimate friends he had will not soon forget him. During his last illness I saw him frequently, and the courageousness with which he bore the advances of the terrible disease, which at last caused his death, was admirable in the extreme. One thing we might well keep in mind, especially those of us who are on the threshold of life, the hope that when it comes time for us to meet the inevitable, we may meet it as he did, "Like one who wraps the drapery of his couch about him, and lies down to pleasant dreams."

Dr. WITBECK moved that a committee of five be appointed to draft resolutions on the death of Dr. Featherstonhaugh. Seconded. Carried.

The President then appointed Drs. Archambault, Witbeck, Mitchell, Curtis, Murray.

On motion, the Society adjourned.

JAMES F. ROONEY, *Secretary*.

[*Minutes received for publication November 11, 1905.*]

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular meeting of the Medical Society of the County of Albany was held in the Albany Medical College Wednesday evening, November 8, 1905.

The President called the meeting to order at 9 P. M.

There were present: Drs. Archambault, Bendell, Beilby, Curtis, Dawes, Jenkins, Lempe, Lomax, Moore, C. H., Myers, Pearce, Rooney, Sampson, Wiltse.

Dr. BENDELL moved that the minutes of the last regular and special meetings be accepted as printed in the ANNALS. Seconded. Carried.

Dr. ARCHAMBAULT presented the report of the committee appointed at the last special meeting to draft resolutions on the death of Dr. Featherstonhaugh, which follow:

MEMORIAL.

Our associate, Dr. James Duane Featherstonhaugh, is no more.

His name shall remain engraved in the annals of this Society, which he honored.

He was an ideal member.

In appreciation, commensurate to his qualifications, the Society called

upon him to fill the different positions which it is in its gift to confer upon its members. Thus, in turn, he was Censor, Vice-President, Delegate to the State Society and President. He performed the duties of these several offices with punctuality, dignity and a graceful modesty, which had no equal but his merit.

His co-laborers have followed his career with interest, admiring in him the good, upright Christian man as much as the eminent and learned physician.

Now that he has gone beyond, they will keep his memory ineffaceable.

They desire to unite to-day with the city in which he spent his life, with the local profession of which he was a foremost personality, and with every member of his family, to mourn his irreparable loss.

J. L. ARCHAMBAULT.

C. E. WITBECK.

J. H. MITCHELL.

F. C. CURTIS.

W. H. MURRAY.

Dr. DAWES moved that the report be accepted and placed on record, and that the committee be discharged with the thanks of the Society. Seconded. Carried.

Dr. BALDAUF read a paper entitled "Primary Carcinoma of the Vermiform Appendix; with a report of three cases."

Dr. PEARCE, in opening the discussion, said that he thought Dr. Baldauf deserved sincere thanks for his presentation of the subject. As was said by the reader of the paper, we usually associated cancer with the fifth and sixth decades of life, while we find that in the series of cases reported to-night, as well as with the large majority of the cases appearing in the literature, the greatest number of cases of carcinoma of the appendix appear in the third decade. It appears that we cannot clinically recognize these cases of cancer of the appendix; that is, differentiate them from other forms of appendicular disease. In none of the reported cases was the diagnosis made clinically, but only by the pathologist, and even by him not from the gross appearance, but only by the microscopical examination. The clinical picture of all these cases is that of the associated acute or chronic appendicitis. The obliterative appendicitis so often found in this sort of appendicular tumor is accompanied by a peculiar destruction of the mucosa. Many writers on this subject have advanced the view that the obliteration of the appendix is precedent and causative of the tumor. This has been the view especially of the French, and with it one cannot coincide. Metastasis is rare, and recurrence is exceptional. Indeed, in only two cases has recurrence been reported, and in these there is a doubt whether the tumor was not originally cecal.

Dr. LEMPE asked whether the destruction of the mucosa was antecedent to or followed the carcinoma.

Dr. BALDAUF in answer stated, that the question of precedence had not been established.

Dr. LOMAX read a paper entitled "Rupture of the Esophagus from External Traumatism."

Dr. JENKINS said that although he felt that few who were at the meeting were able to discuss the paper intelligently, and although he knew that he could not add to it, he felt that it would be unfortunate to let the matter pass without acknowledging gratefully the immense amount of work and time shown to be expended by its author in its preparation. He regretted the smallness of the meeting, for he felt that the value of the paper deserved a better hearing. He narrated the case of a man who while out driving had lost his false teeth, and not finding them, imagined that he must have swallowed them. He was brought to the hospital where an esophagotomy was done, which was without success in revealing the location of the missing teeth. The man died as a result of the operation, and his teeth were never found. This was before the day of the X-ray.

On motion, the Society adjourned.

JAMES F. ROONEY, *Secretary.*

[*Minutes received for publication November 11, 1905.*]

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—CITY OF ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, OCTOBER, 1905.

Deaths

	1901	1902	1903	1904	1905
Consumption	16	26	16	21	20
Typhoid Fever	0	0	3	0	2
Scarlet Fever	0	0	1	0	0
Measles	0	0	5	0	0
Whooping-cough	0	2	0	0	0
Diphtheria and Croup.....	6	4	0	0	4
Grippe	0	0	2	0	0
Diarrheal Diseases	2	5	7	3	4
Pneumonia	8	9	7	12	7
Broncho-pneumonia	1	0	0	0	8
Bright's Disease	7	11	12	15	8
Apoplexy	11	10	14	2	14
Cancer	8	8	7	9	4
Accidents and Violence.....	13	7	8	9	3
Deaths over seventy years.....	20	16	26	23	17
Deaths under one year.....	17	9	14	18	17
Total deaths	126	136	137	136	135
Death rate	15.13	16.00	16.12	16.00	15.88
Death rate less non-resi-					
dents	13.06	14.35	14.35	14.83	13.65

Deaths in Institutions.

	1902		1903		1904		1905	
	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.	Resi- dent.	Non- resi- dent.
Albany Hospital	7	6	10	10	8	8	8	7
Albany County Jail.....	0	0	0	0	0	0	0	0
Albany Orphan Asylum.....	1	1	3	0	1	0	1	2
County House	2	2	3	0	4	1	2	2
Homeopathic Hospital	2	0	0	0	2	0	2	0
Hospital for Incurables.....	1	0	0	0	0	0	0	0
House of Good Shepherd.....	0	0	0	0	0	0	0	0
House of Shelter.....	1	0	0	0	1	0	0	0
Home of the Friendless.....	0	0	2	1	0	0	0	0
Little Sisters of the Poor.....	2	0	0	0	0	0	0	0
Public Places	0	3	0	2	0	0	0	0
St. Francis de Sales Orphan Asylum	0	0	0	0	0	0	0	0
St. Margaret's House.....	0	1	1	1	1	1	6	5
St. Peter's Hospital.....	2	0	0	1	0	0	2	2
St. Vincent's Male Orphan Asylum	0	0	0	0	0	0	0	0
St. Vincent's Female Orphan Asylum	0	0	0	0	0	0	0	0
Home for Aged Men.....	0	0	0	0	0	0	0	0
Dominican Convent	0	0	0	0	0	0	0	0
Penitentiary	0	1	0	0	0	0	0	0
Sacred Heart Convent.....	0	0	1	0	0	0	0	0
Births								57
Marriages								66
Still Births								0

PLUMBING INSPECTIONS.

In the Bureau of Plumbing, Drainage and Ventilation there were three hundred and four inspections of which one hundred and eighty-two were of old buildings and one hundred and twenty-two of new buildings. Sixty-two iron drains were laid, thirty-six connections with street sewers, thirty-nine tile drains laid, four urinals, two latrines, one hundred and five cesspools, one hundred and thirty-six wash basins, one hundred and thirty-seven sinks, ninety-four bath tubs, ninety-one wash trays, nine trap hoppers in yard, one hundred and sixty-seven tank closets, one stable wash stand, one shower bath, one horse trough.

One hundred and seventeen permits were issued of which ninety-six were for plumbing and twenty-one for building purposes. There were twenty-six plans submitted of which sixteen were of old buildings and ten for new buildings. There were eight houses tested on complaint. Two with blue, red and six with peppermint. There were thirty water tests. Fifty houses examined on complaint and forty-one reinspections. Thirty-two complaints were found valid and eighteen were without cause.

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

	1901	1902	1903	1904	1905
Typhoid Fever	11	13	3	9	10
Scarlet Fever	3	7	5	2	22
Diphtheria and Croup.....	89	59	24	9	24
Chickenpox	4	8	3	1	0
Measles	3	0	4	4	0
Whooping-cough	0	0	0	1	0
Consumption	0	0	0	1	4
Totals.....	110	87	39	27	60

Number of days quarantine for diphtheria:

Longest..... 26 Shortest..... 8 Average..... 13 7-13

Number of days quarantine for scarlet fever:

Longest..... 23 Shortest..... 11 Average..... 22 1-2

Fumigations:

Houses..... 21 Rooms..... 22 1-2

Cases diphtheria reported..... 24

Cases diphtheria in which antitoxin was used..... 21

Cases in which antitoxin was not used..... 3

Deaths after use of antitoxin..... 4

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR OCTOBER, 1905.—Number of new cases, 81, classified as follows: dispensary patients receiving home care, 5; district cases reported by health physicians, 4; charity cases reported by other physicians, 19; patients of limited means, 53; total number of patients under nursing care during the month, 120. *Classification of diseases* (new cases): Medical, 16; surgical, 8; gynaecological, 5; obstetrical work of the Guild, 23 mothers and 21 infants under professional care; dental, 4; throat and nose, 2; contagious diseases in medical list, 3; transferred to hospital, 3; deaths, 1.

Special Obstetrical Department: Number of obstetricians in charge of cases, 3; attending obstetricians, 2; medical students in attendance, 4; Guild nurses, 6; patients, 4; number of visits by attending obstetricians, 4; by the medical students, 24; by the Guild nurses, 41; total number of visits in this department, 69.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 991; for professional supervision of convalescents, 182; total number of visits, 1173. Four graduate nurses and six assistant nurses were on duty. Cases were reported to the Guild by one of the health physicians and by thirty-two other physicians and by four dentists.

ALBANY MEDICAL COLLEGE ALUMNI OF NEW ENGLAND.—The annual meeting will be held at Hartford, Conn., December 6, 1905. Dr. W. G. Murphy, the Secretary wishes to have delegates from the other Alumni branches, the General Alumni Association, Greater New York, and Central New York. Dr. Samuel B. Ward will deliver the annual address and others from the College are expected to attend.

HYGIENIC LABORATORY BULLETIN NUMBER TWENTY-ONE.—Immunity Unit for Standardizing Diphtheria Antitoxin (based on Ehrlich's Normal Serum). Official standard prepared under the Act approved July 1, 1902, by M. J. Rosenau, Director of Hygienic Laboratory.

The object of this bulletin is to describe the methods by which the immunity unit for measuring the strength of diphtheria antitoxin is obtained and the principles involved. The unit is based on the one established by Ehrlich and has been made by comparison with the normal serum sent to this laboratory by the Kgl. Pr. Institution fur experimentelle Therapie, Frankfurt, a. M., Germany.

The unit made in Hygienic Laboratory, U. S. Public Health and Marine Hospital Service is the legal unit for this country. The methods by which it is produced as described in this bulletin may be taken as official. The standard serum is preserved in small tubes. Every two months one of these tubes is opened and tested and distributed to the licensed manufacturers and others who are working in this line. The particular object of this standard is to insure the strength of anti-diphtheria serum sold in the United States by licensed manufacturers. The strength of the antitoxin is expressed in units.

The article is of a very technical nature with chapters describing Ehrlich's side chain theory of immunity, the Immunity Unit, the constitution of toxine and its relation to the antitoxin, the toxine, the antitoxin, the methods used in making the unit, the making of serum as made by licensed manufacturers, and the serum antidiphthericum in the pharmacopeia.

INTERNATIONAL MEDICAL CONGRESS.—The committee in charge of the meeting, which will be held in Lisbon from April 19 to 26, 1906, has written asking for the contribution of papers on the following medicolegal subjects, and saying that as yet no titles of communications touching on any of these subjects have been received from this country: The signs of virginity and of defloration in medicolegal relations. Hand marks and finger prints; their medicolegal importance. The medicolegal importance of the carunculæ myrtiformes. The mechanism of death by hanging. The value of bacteriological examination of vulvovaginal discharges in the determination of venereal contagion. The signs of death by drowning. Ecchymoses in legal medicine. Spontaneous and criminal abortions from a medicolegal point of view. Medicolegal investigation of blood stains. The relations between the seat of cerebral contusions and the point of application of the agent which produced them. Epilepsy in legal medicine. The induction of abortion; when is it permissible? The value of legal medicine in the study of criminal law. The best legislation for the protection of the "medical secret" (the obligation imposed

upon physicians to treat as inviolable all information concerning patients obtained while in the discharge of their professional duties). The effects of the civil and penal law toward the newborn living infant. Distinction between the natural openings in the hymen and tears of this membrane. Criminal vulvar copulation. Organization of medicolegal services. Those intending to take part in the discussions of the congress, or to prepare papers for it should inform the Secretary of the American Committee, Ramon Guiteras, New York.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—By recent action of the State Civil Service Commission, approved by the Governor, the civil service rules have been extended to cover the county service of the counties of Albany, Monroe, Onondaga and Westchester in addition to the counties already classified. The examinations for positions in the county service are held by the State Civil Service Commission. Examinations will be held on December 9th for the following positions in the State and county service:

Assistant Chemist, Cancer Laboratory, Buffalo, \$720; Clerk and Junior Clerk in the county service of Erie, Monroe, Onondaga and Westchester counties only; Health Officer, town of Hamptonburgh, Orange county; Orderly or Watchman; Physician in State Hospitals and Institutions, \$900; Statistician, \$1,500; Supervisor and Matron of Farm Cottage, Rochester State Industrial School, \$900 and maintenance; Trained Nurse, \$420 to \$600 and maintenance; Veal Inspector, Department of Agriculture, \$800 to \$1,000; Woman Officer, State Institutions, \$360 and maintenance. An appointment of a Veal Inspector will be made in the Seventh Judicial District for which qualified residents of that district will be preferred.

The last day for filing applications is December 4th. Application forms and detailed information may be obtained by addressing the Chief Examiner of the Commission at Albany.

THE MEDICAL WHIST CLUB OF ALBANY on Monday evening, November 13th, entertained the physicians of the city and adjoining cities with a lecture at Jermain Hall, given by Dr. Walter G. Chase of Boston who had recently taken at the Epileptic Colony at Sonyea a series of moving pictures of patients during convulsive seizures. This lecture was entitled "The Biograph in Medical Teaching; exhibiting in moving pictures epileptic convulsions and other motor disturbances."

Dr. William P. Spratling, Superintendent of the Colony, gave clinical information concerning the cases, and also described the Colony.

After the lecture the members of the Club and invited guests repaired to the Fort Orange Club to meet Dr. Chase and Dr. Spratling; also to partake of a supper prepared by the Club.

INFORMATION WANTED AS TO THE PRACTICAL LIVES OF THE BLIND.—Dr. George M. Gould, 1722 Walnut street, Philadelphia, will be grateful for any trustworthy information as to the methods which have been devised by the blind in overcoming their disability or in gaining a livelihood. Accounts of such lives, anecdotes, references to literature, etc., will be appreciated.

ELLIS HOSPITAL, SCHENECTADY, N. Y.—Changes in the Medical Staff: At the recent meeting of the Board of Managers, Dr. Charles G. McMullen was appointed Gynaecologist, Dr. Frank VanDerBogert, Attending in Diseases of Children, Dr. Henry A. Kurth, Obstetrician, Dr. Warren B. Stone, Pathologist.

The new dispensary staff includes Dr. R. A. Sauter, Dr. W. L. Fodder, Dr. J. H. Collins, Dr. W. L. Huggins, Dr. L. K. Dugan, and Dr. F. C. Reed.

PERSONALS.—Dr. J. F. FORCE (A. M. C., 1871), has changed his address from No. 505 South Pasadena Ave., Pasadena, Cal., to No. 485 South Madison Ave., Pasadena, Cal.

Dr. JOHN ARCHIBOLD (A. M. C., 1888), was elected Mayor of Cohoes, N. Y., November 7, 1905.

Dr. EDWARD A. STAPLETON (A. M. C., '04), has opened an office at No. 20 South Williams St., Johnstown, N. Y.

Dr. FRANK E. WHITE (A. M. C., '04), has started practice at No. 120 Broadway, Schenectady, N. Y.

Dr. WM. E. GARLICK (A. M. C., '05), has started practice at Wappingers Falls, N. Y.

Dr. JAMES W. WHITE (A. M. C., '05), has started practice at Rural Grove, N. Y.

Dr. M. J. KEOUGH (A. M. C., '05), has started practice at No. 116 Main St., Cohoes, N. Y.

In Memoriam

CLARKSON C. SCHUYLER, M. D.

Clarkson Crosby Schuyler, born in White Plains, Westchester county, on the 17th day of September, 1850, was the son of Thomas Hook Schuyler and Angelica Aspinwall Schuyler, a family of prominent distinction among the early settlers of this State. During the early sixties the family took up their residence in Port Schuyler, where Clarkson obtained his early education in the public schools and in the Business College. Upon leaving school he obtained employment on the clerical force of the Watervliet Arsenal, and it was while thus employed that he began the study of medicine, spending the time after his daily work in the office of Dr. Sabin, preparing himself for the Medical School at Albany, where he graduated with honor in 1865.

Immediately after graduating he entered the office of Dr. Le Roy McLean, of Troy, as an assistant in his private as well as hospital practice. Failing health soon compelled him to abandon very active practice and he went to Europe, where he made special study of diseases of the throat and nose with Sir Morell Mackenzie in the London Throat Hospital. He received many marks of appreciation from his distinguished

preceptor, who admired the young student's striking personality and enthusiasm in the pursuit of his studies. Upon his return to Troy, Dr. Schuyler entered upon the practice of his specialty, in which he soon obtained very marked success and was made a member of the Troy Hospital staff, a position he held for fourteen years. His genial qualities made him a popular member of many social as well as military and scientific associations. He was a member of the Albany and Rensselaer County Medical Societies, the State Medical Society, the Association of Military Surgeons of the United States, the Holland Society, Society of Colonial Wars and the Military Organization of Foreign Wars. He was interested in the State militia and served as assistant surgeon of the Citizens Corps from 1883 to 1891. A staunch Democrat, he rendered valuable service to his party, and in 1893 Governor Flower appointed him as Forest Commissioner, a position he held for two years. An enthusiastic sportsman, he manifested very great interest in the preservation of the forest, game and fish of the State. In December, 1899, he received the appointment of State Commissioner to the World's Exposition in Paris. An ardent student in all that pertained to his profession and literature, a close observer of events bearing on public and social conditions, he also possessed an intimate acquaintance with the history of his country. His success in his profession as in society can be attributed to a generous social nature, strong individuality, natural ability, marked versatility and an honorable ambition to do his duty to humanity. In September, 1879, Schuyler was married to Miss Catherine Scoville, who lived only six months after his marriage. He was again married on the 17th day of September, 1889, to Miss Chastine Winslow Hartwell, the only daughter of William Wallace Hartwell and Maria McLean, of Plattsburg, N. Y., and who now survives him. The failing health and subsequent death of Mr. Hartwell compelled the doctor to abandon his practice and take up his residence in Plattsburg to look after the extensive interests of his father-in-law. In spite of the many and arduous duties that his new occupation imposed upon him, Dr. Schuyler always retained a warm place in his heart for the things that belonged to his profession, and he remained until his death an enthusiastic member of the Albany Medical College Alumni Association and always was proud of his alma mater and his medical associations. I know of nothing that gave him more pleasure than his election to the presidency of the Alumni Association, and I well remember his profound regret that he was not in his old-time vigor to enjoy the last banquet of the Association which his fast-declining health permitted him to attend. After a prolonged illness Dr. Schuyler died in Plattsburg on the 15th day of September, 1905.

Z. ROUSSEAU.

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No. 2

CEREBELLAR TUMORS

ALBANY MEDICAL ANNALS

Journal of the Alumni Association of the
Albany Medical College

FEBRUARY, 1905



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ALUMNI COMMITTEE:

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The physician finds in many cases, from the simplest to the gravest, that the question of nourishment must be considered as well as the remedies.

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Panopepton is beef and wheat elaborated by an artificial application of the natural digestive principles into a form ready for absorption. It is the very essence of the foods from which it is made, the real substance freed only from innutritious and indigestible matter.

Panopepton imparts the substance as well as " the strength " of a true food; it gives new life and fortifies against reaction.

Panopepton is compatible with all medicinal treatment; is agreeable in the extreme; spares the patient the effort of digestion; satisfies every need for nutrition.

Panopepton is found equal to the occasion in the exigency and the emergency that calls for a reviving, restoring and sustaining food.

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